

The MILLING WORLD

and CHRONICLE OF THE GRAIN and FLOUR TRADE.

PUBLISHED EVERY THURSDAY MORNING.

VOL. XI.—No. 1.

Buffalo, N. Y., November 6, 1884.

\$1.50 Per Year.
Single Copies, 3 Cts.

THE GRAIN EXPORT OF HUNGARY.

From *Allgem.-Muehlen und Masch. Industrie Zeitung*.

THE condition of the grain trade has changed of late more and more to the detriment of Hungary; especially Russia, in view of this year's abundant harvest is making the greatest possible exertions to sell the large stocks yet on hand of the 1883 harvest. At St. Petersburg good hard Volga wheat is sold for Mannheim, Germany at the never before known price of 8 fl. per 100 kilos., so that even American competition in this market receives a serious drawback for the present time, and must allow Russia to supply the demand as long as the navigation remains open.

New York parties seem to comprehend that Russia is bound to sell at any price, and that a further reduction on their side would only result in a corresponding lowering of the Russian grain prices. In this way St. Petersburg really controls the European grain markets, and if there are yet fair sales of American grain in western Europe, it must be ascribed to the good quality of this year's crop, and to the fact that the flat milling system in use in England, France, and a large part of Germany, can utilize the softer American wheats to better advantage than the hard Russian varieties. In Switzerland, and Southwest Germany, where high milling is practiced almost exclusively, the hard Russian Volga wheats, especially "Red Saxonka," are preferred, and as these varieties, above all others, are sold at a very low price, Hungary will suffer severely in its grain exports by this Russian competition on the accustomed markets. The decrease of the amount of the Hungarian exports is principally due to this fact. "The city of Mannheim, which used to be the best market for Hungarian grain, has, by these changed conditions, transformed into the most formidable rival of the Hungarian grain trade. The constantly increasing importation of trans-oceanic grain, and the fact that Mannheim is so favorably situated and has secured the cheapest freight rates both by sea and river from all the ports of the Baltic as well as of the Black and Asow sea, have changed the entire grain trade of Southern Germany and Switzerland, injuring the export trade of Hungary to a considerable extent. As the conditions of the markets present themselves to-day, Hungary will find many difficulties to combat and many obstacles to overcome before arriving at a satisfactory solution of the problem what to do with the surplus wheat. Nothing but a radical change in the entire situation will stimulate the flagging energies of the export trade in grain.

A TREATISE ON FLOUR.

II.

To guard against any desiccation of the gluten, in the following experiments, it was kept in a very moist place. The changes in the different flours are noted for the number of hours elapsed since the preparation of the samples:

Hours.	Flour, 1st quality.		2d quality.	
	Acidity.	Gluten.	Acidity.	Gluten.
0	0.034	28	0.041	29
1	0.036	31	0.042	37
7	0.036	24	0.053	37
10	0.038	26	0.056	34
14	0.042	25	0.059	28
23	0.045	23	0.068	26

The dough was not touched in all these experiments, but was allowed to remain absolutely at rest. A kneading or other manipulations will produce results differing a little from the above. If the temperature is increased to 40 degs. C., the above noted changes occur sooner. In old flours the action is similar, the gluten decreases, sometimes from the very commencement, and before a maximum has been attained.

The differences which are caused by the varying quantity of flour used in the preparation of the dough, are small, but worthy of notice. They are caused in part by the longer time necessary to obtain the gluten from larger quantities of dough. Lumps prepared from respectively 10, 20, 30 and 100 grammes of flour gave, after a rest of twenty-five minutes, 2.8, 5.8, 15.2 and 21.2 grammes of gluten, or 28, 29, 30.5 and 31.5 per cent. of the 80 per cent. flour made from soft wheat. The results from the 88 per cent. flour from hard wheat for similar quantities were 3.4, 6.8, 17.5 and 26.4 grammes of gluten, or 34, 34, 35 and 26.4 per cent.

If 60 grammes of cold water are used for the preparation of the dough instead of 40 gr. of warm water to every 100 gr. flour, the separation of the gluten is more difficult, but its weight is the same. The time necessary for this separation varies with the quality of the wheat. It varies also with the age of the flour. In the latter case the time is shortened, and the gluten is more solid and granular. In some flours from Chili the gluten is so fluid when the flour is fresh, that it is almost impossible to separate it, while after 18 months, it attains a fair consistency and is easily manipulated. The errors of the experimenter in such analyses are apparent. With four first class operators, working at the same time and under the same conditions, a difference in the weight of gluten was obtained amounting to 1 per cent. of the weight of the flour. These discrepancies were mainly due to the manner in which the gluten was separated from the flour and to the amount of pressure to which it was subjected before weighing for the purpose of freeing it from the superfluous water.

ENGLISH AND AMERICAN FARMING.

Mr. John W. Bookwalter, of Ohio, formerly a candidate for Governor in that State, a practical farmer and one of our most intelligent authorities on agriculture—who appears to be now in England, has addressed an important letter to the London Miller, on farming in England and the United States, from which we extract the following:

Whatever may be the real condition under which wheat-growing is carried on in this country (England), a few figures may tend to dispel an illusion pretty generally current as to the superior advantages and facilities enjoyed by the American farmer. That he possesses cheap fertile lands with a most genial climate is true. That he is weighed down under an oppressive system of taxation, maintained in the interest of other industries, that almost wholly neutralizes these advantages, is also true. What nature, therefore, has bestowed, man has taken away. I learn, by an examination of statistical tables, that the wheat crop of

Great Britain has yielded for the current year an out-turn of thirty bushels per acre on the average. This, I believe, is somewhat above the average yield of Indian corn per acre in America. For the present year, the wheat crop of the United States is estimated to yield thirteen bushels per acre on the average. The price of wheat at the present writing in England is about 105 cents per bushel.

The price in Chicago at the same date is 76 cents per bushel. It must be borne in mind, however, that the great wheat-growing States lie somewhat remote from the above market; so that the farmer in those States actually receives much less per bushel than the Chicago quotation. Moreover, there is not in England that extreme divergence of prices that is found in America, and which is due to difference in distance from central markets. Taking the above prices as a basis for computation, we find that the value of wheat per acre in England is \$31.50, while in the United States it is less than \$10 per acre. In addition to the grain, the straw in this country, which is carefully preserved, is possessed of considerable value, yielding for each acre from \$7 to \$9. In America, through many of the grain-growing States, the straw is classed as refuse, and held at a mere nominal value only. Rating its value at \$2 per acre in America and at \$4 in England, we have \$40 as the aggregate money value derived from an English acre of wheat, while for America it will be less than \$12 per acre. A comparison of other crops, roots—which in this country is a substitute for Indian corn in the United States—hay, &c., would yield substantially the same results. This enormous difference in the money value of the product of an equal area of land will, it is apparent, go far to equalize any difference that may exist in virtue of higher price of land, cost of fertilization on the one hand, as against low price of land and natural fertility on the other.

A close analysis will, however, show that in fact these differences are more apparent than real; as much land in England can be purchased for eighty dollars to one hundred dollars per acre, and fairly good lands, I am told, can be rented for from 20s to 30s per acre, while in many of the wheat-growing States, such as Ohio, Indiana and Illinois, lands are held from thirty dollars, to seventy-five dollars per acre, and an annual rental of three dollars to five dollars is not uncommon. I have, indeed, been informed by high authority that lands in England capable of producing twenty to thirty-five bushels of wheat have been purchased for £12 per acre. * * *

It is also only partially true that machinery is more generally used in America than in England, for in England labor seems to be thoroughly well reinforced by machines of great variety and efficiency. Indeed, in some respects, labor-saving machines are more generally employed in England than in the United States. Thus, plowing by steam is pretty generally practiced in England even on farms of medium size, while in America the steam-plow is confined to a comparatively few large farms in the great level plains of the West. The advantage the American has over the English farmer in this respect is inconsiderable, and, as affecting the prime cost of production,

does not compensate for the higher wages the former has to pay. * * *

I find that for the United Kingdom the whole agricultural population is set down at 2,652,000. The amount of land under cultivation in 1883, exclusive of pasturage and grass lands, was given at 22,150,000 acres, or about nine acres to each person. There are besides 25,000,000 acres of pasture lands, exclusive of heath or mountain lands. In the United States there are about 24,000,000 of people included in the agricultural class. In that country there were, in 1880, 284,771,000 acres of improved lands, including pasturage and grass lands, or about twelve acres to each person. I have already pointed out the important fact that the average out-turn from an acre of wheat in England is, in value, over three times as much as in the United States, estimated on a dollar and cent basis. But the full real relative values can only be fairly shown when the exchangeable value of the crop in the two countries is contrasted. When this method of comparison is applied, it will be found that the true value of an acre of wheat in England is from \$55 to \$60, as against less than \$12 in the United States, for a given number of bushels of wheat in the former country will exchange for from 40 to 60 per cent. more of the necessities of life than a like amount will in the latter country. * * *

Having, myself, engaged in agriculture for over twenty years in the West, being yet identified with that interest, and having had the opportunity to somewhat carefully compare prices, I am of the opinion that the farmer of the United States is obliged to pay for what he consumes, and does not produce an average of one-third to one-half more than the farmers of England. While complaining of the hardship in being compelled to accept 105 cents a bushel for his wheat, the farmer of England must not forget the blessing that is vouchsafed him in the great privilege he has of exchanging one bushel of wheat for that which the American farmer will be compelled to exchange for from one and a half to two bushels. It is certainly no mean advantage in favor of the British farmer to be enabled to exchange the products of one acre of wheat for that which the farmer in the United States is obliged to exchange from four to six acres.

THE DEPRESSION OF GRAIN PRICES.

By Prof. Bela Foddes in *Univ.-Muehlen Zeitung*.

The recent depression in the prices of grain calls up a large number of questions, theoretical as well as practical, to account for the oscillation of values. The welfare of millions of men depends upon this, for cereals form the leading article of diet almost everywhere. Grain prices have received their fair share of attention at the hands of political economists, and the causes of their fluctuations have been at various times the subject of thorough and extensive investigations. But in spite of all this, our social mathematicians are unable, up to the present time, to find the proper formula for the rise and fall thereof, which appear to be governed by laws of their own. There is only one thing which we are able to define correctly: Character, direction and quantity of each price fluctuation as compared with

that of preceding years; in such a way we obtain a series, a curve so to speak, which illustrates in the most forcible manner the fluctuations. For this purpose we will collect the grain prices in the different European countries for a series of years, wherever the necessary data are available. Our investigation primarily brings us face to face with the fact that we are at present in a downward curve of prices, of which the latest depression forms only a small fragment. If we compare the grain prices of the last three years with the average of the prices between 1871 and 1880, we find the following tables:

1. England, prices in shillings and pence per Imperial quarter:

	Wheat.	Barley.	Oats.
1871-80.....	51.0	37.10	25.8
1881.....	45.4	31.11	21.9
1882.....	45.1	31.2	21.10
1883.....	41.7	31.10	21.5

2. France, prices in francs per hectoliter;

	Wheat.	Rye.	Barley.	Oats.
1871-80.....	23.10	15.11	13.12	10.15
1881.....	23.38	14.84	12.81	9.58
1882.....	21.51	13.94	12.50	9.75
1883.....	19.16	12.98	11.54	9.18

3. Prussia, prices in marks per 1,000 kilogram:

	Wheat.	Rye.	Barley.	Oats.
1871-80.....	222.8	190.1	166.4	157.8
1881.....	220	203	166	159
1882.....	208	161	154	146

The statistics for 1883 are not yet given. The latest "Annual report of the German Empire" for Berlin gives the following prices:

	Wheat.	Rye.	Barley.	Oats.
1881.....	219.40	195.18	152.45	150.59
1882.....	204.20	182.19	131.66	123.41
1883.....	196.06	144.67	129.4	116.06

4. Austria, prices in Austrian gulden per metercentner in Vienna.

	Wheat.	Rye.	Barley.	Oats.
1871-80.....	13.29	9.50	9.80	7.82
1881.....	13.35	10.60	10.69	7.56
1882.....	12.18	8.70	10.16	7.50
1883.....	11.04	6.88	10.62	7.12

5. Hungary, prices in Austrian gulden per metercentner in Pesth.

	Wheat.	Rye.	Barley.	Oats.
1871-80.....	11.96	8.67	7.79	7.11
1881.....	12.39	9.66	8.25	6.90
1882.....	11.23	9.44	6.81	7.21
1883.....	10.12	7.46	7.18	6.58

Thus we see that in all of these countries a constant price reduction has taken effect, with a few insignificant exceptions, and that 1883 represents the lowest figures. We cannot well close our eyes to the conviction that certain factors, which worked detrimentally, have been in operation everywhere, and the result of which is apparent in the price reduction since 1881. If we want to locate more exactly the commencement of the curve of depression, we have to follow the prices between 1871 and 1880 separately. But in order to exclude an unnecessarily large number of figures, we will divide the period of ten years into two periods of five years each, and thus obtain the following series:

1. England.

	Wheat.	Barley.	Oats.
1871-75.....	54.8	39.5	26.3
1876-80.....	47.6	35.5	24.3

2. France.

	Wheat.	Rye.	Barley.	Oats.
1871-75.....	23.79	15.35	13.21	10.17
1876-80.....	23.39	14.98	12.02	10.12

3. Russia.

	Wheat.	Rye.	Barley.	Oats.
1871-75.....	235.2	190.3	170.8	163.2
1876-80.....	201.4	166.2	162.0	152.5

4. Austria.

	Wheat.	Rye.	Barley.	Oats.
1871-75.....	13.96	9.86	9.43	7.98
1876-80.....	13.61	9.13	10.11	7.65

5. Hungary.

	Wheat.	Rye.	Barley.	Oats.
1871-75.....	12.68	8.99	8.13	7.31
1876-80.....	14.24	8.35	7.86	6.91

We therefore see that the price reduction commenced as early as the period between 1876 and 1880, and has kept on going down since. We also see how much lower are the prices of the last few years as compared with those of 1871-75. The price of wheat per Imperial quarter in England was

in 1883 13 shillings less than in 1871-75, and in Austria the difference per metercentner for the corresponding periods was almost 3fl.

We are now face to face with the question: Have the prices of the last years been excessively low, or have those of 1871-75 been excessively high? Or, which condition is normal, the low prices of the latter, or the high prices of the former years? And our answer is most emphatically that the high prices of 1871-75 are decidedly more abnormal than the low prices of the latter years, an assertion which is demonstrated by the following data:

1. England, price in shillings per Imperial quarter:

	Wheat.	Barley.	Oats.
1851-60.....	54.6	34.5	23.9
1861-70.....	51.1	36.9	23.7
1871-75.....	54.8	39.5	26.3

2. France, prices in francs per hectoliter, (only the data for wheat are available.)

	Wheat.
1851-60.....	22.11
1861-70.....	21.49
1871-75.....	23.79

3. Prussia, price in Silbergroschen per hectoliter:

	Wheat.	Rye.	Barley.	Oats.
1851-60.....	161.9	190.0	92.7	68.6
1861-70.....	156.4	112.8	90.9	61.8
1871-75.....	177.5	125.3	102.4	62.8

4. Austria; here the average prices are given for the whole country in florins per hectoliter:

	Wheat.	Rye.	Barley.	Oats.
1851-60.....	7.48	5.41	4.35	2.81
1861-70.....	7.04	4.87	4.05	2.71
1871-75.....	10.12	6.96	5.84	2.76

5. Hungary, prices given like Austria:

	Wheat.	Rye.	Barley.	Oats.
1851-60.....	7.28	5.10	3.66	2.71
1861-70.....	7.70	5.13	3.88	2.84
1871-75.....	9.57	6.94	4.87	2.81

From these figures we can see plainly that the five years between 1871 and 1875 are distinguished by a general advance in prices, in fact representing the highest figures of the twenty-five years past. The conclusions arrived at by a careful perusal of such statistics, convinces us that the most recent depression in grain prices must not only be looked upon as a part of a movement which commenced in 1876-80, but also as a reaction of the excessively high prices obtained in 1871-75; viewed in this light the depression loses most of its abnormal and surprise-creating character, and appears as the natural action of cause and effect. As long as this reaction is confined to certain limits, we welcome it as beneficial to a large majority of the people, although we do not advocate that low grain prices always mean prosperity, because they do not always denote plenty, nor do high prices denote scarcity.

"TRAMPS" AS GRAIN CARRIERS.

The steamship "Bitterne," says the New York Commercial Bulletin, has just sailed from this port for London with 186,000 bushels of grain, which is the largest cargo of this character ever carried from New York. The steamer is 5,085 gross tons, and as she does not make regular trips between here and Europe, is classed by the "old liners" as a first-class specimen of the great army of ocean "tramps." Her cargo consisted of 180,000 bushels of oats, and 56,000 bushels of wheat, at a rate of about 7 cents and 8½ cents per bushel, respectively, all of which, except 6,000 bushels, was consigned in bulk. This is considered a remarkable shipment, especially in view of the fact that freights are low, business dull and competition keen. Further inquiry from an exceptionally reliable source, developed some interesting data respecting the relative size of grain cargoes carried from this port. The steamer "Faraday," for instance, which has just landed the shore end of the Bennett-Mackay cable, took from this port, in June of last year, 110,000 bushels. In August of last year she took hence to Europe, 96,000 bushels, and in October 99,000. The remarkable feature

in these shipments was the fact that the tanks of the vessel, which have done such excellent service in carrying the cable, were used as grain receptacles. The "Faraday," though employed in a high respectable calling, is, nevertheless, regarded as belonging to the category of tramps, though, of course, of the most respectable kind. Another, and an equally bold and aggressive sailor belonging to the same enterprising series, which bids for freight quickly and quite as expeditiously carries it off, is the "St. Ronans." She transported in January 1883, 90,000 bushels, and on September 24 of the same year, also took to London 90,000 bushels of American cereals, and on another occasion her holds carried over 100,000 bushels to the same metropolis. This ocean competitor is consigned to Watson, Sumner & Co., of this city. Besides these, others have carried from 40,000 to 60,000 bushels. Strange to say, the regular liners refuse to take more than five or six loads of grain by any one ship, on account of the general cargo they always manage to obtain, and they seldom exceed their registered tonnage, on account of insurance. The ordinary "tramps," as a rule, unless they come specially chartered, will carry anything they can find. Some times they get full cargoes. If, for example, they go to Cork for orders, they generally take a full cargo. Quite a large number are now waiting for cargoes down South Hampton Roads, for instance, and Delaware Breakwater. Cotton is moving, and as no regular European lines run between the cotton centres and Europe, the irrepressible tramp reaps a fair harvest. Many of them are of course laid up in Europe, their owners waiting with the complacency of a Micawber for better times. Wherever freight is to be obtained, however, the prow of the vessel is turned thitherward, and with a vigilance worthy of the human being, bearing a similar name, never, it is alleged, misses a chance of taking all he can get. Some of the owners of the regular lines, such as the Anchor and Cunard, own several of these itinerant boats, and one or two are used as relief vessels.

One of the best informed freight men down town said: "The tramp is naturally an important factor in the matter of rates. Of course, when such a boat comes in competition at the ports where regular sailing vessels anchor and depart, it somewhat affects the 'liner.' The tramp can afford to 'cut,' and unlike the cutting among our railroads, the weaker ones have little to lose by quoting a rate which it would be almost impossible for the 'regulars' to offer. But though this species of boat is sometimes subject to adverse comment, I really don't see why it should be. It certainly fills a place that no other boat can. Roaming about the ocean, in every nook and corner of the world where there's a dollar's worth of commerce to be had, the tramps help to swell the trade between nations, and if, through lack of this 'snatch' trade, they manage to find these ports and fall into line and take their chances with others, I don't see that any blame can be attached to owner and anyone else. The port is open to all, and I wish I could say, free to all."

STOPPING A MILL.

The late Judge Ball, though a charming conversationalist and socially popular, was very irritable. The Cork Court House, in which he on one occasion opened assizes, was backed by an ancient flour mill of large dimension, owned by a very litigious gentleman named Bendeable. So close was the mill to the Court House, that the noise of the machinery disturbed the tympanum of Judge Ball, who was in his latter years hard of hearing. "What noise is that, Mr. Sheriff?" he thundered, with fiery face. "It is a mill, my lord," meekly responded that functionary. "Let it be stopped," com-

manded the Judge. "I can not stop it, my lord," said the Sheriff, "the owner is the only one who can do that. Send for the owner, then," said the Judge. This was done, and the order given. Bendeable took it literally and unconditionally. The mill was stopped, and remained stopped long after the assizes were over. Bendeable, who was no fool, sued for damages, and the Government had to pay a large sum to compromise.

THE CHEMISTRY OF BREAD-MAKING.

I.

The following lecture by Prof. Chas. Graham was delivered at the International Health Exhibition at London, as reported by the "Miller's Gazette." The cereals are undoubtedly the most valuable of all the fruits of the earth, and it is, therefore, needful, that we should rightly study their mode of preparation for the use of man. The question may have occurred to some of you, how can science aid art? Surely a good baker requires no assistance from science. Let us see what is the answer to it. Without going through a number of instances in which undoubtedly science has advantaged art, I will refer only to one or two. In the first place, there is no doubt that agriculture has benefited largely by the investigations of Liebig, and, following him, of others, into the composition of the mineral matter of plant life. It is perfectly true that in metallurgy, steel was obtained ages ago of the very highest excellence. Yet surely the study of chemistry has enabled us to manufacture iron and steel at such a price and in such quantities as would have been utterly impossible in the olden time. Again, take another illustration, that of dyeing; there are two methods of dyeing of historic interest—that of Turkey red dyeing and that of indigo dyeing—because these are the only two really permanent colors, and secondly because science has investigated the nature of Turkey red dyeing, and has found out that the important principle in the madder-root was alizarine. Science has not stopped at merely finding out the nature of the dye; science has succeeded in creating the dye out of gas-tar products. Lately, indigo has in a similar way been created; it is already a success, and will soon become a great commercial success. I give those merely as illustrations of the way in which science can benefit art, and though we need not look for any such startling, such epoch-making discoveries as that of the making and building up alizarine and indigo, still I feel sure that science little by little will greatly improve the art of bread-making.

I have the honor of addressing some London bakers, and there are London bakers who are exhibitors in this Exhibition, and it is perfectly true that we now get in London bread of the highest excellence, but still the Council of this Exhibition are not thinking only of the best West End bakers, they are not limiting their views solely to London bakers,—they are considering the interests of the United Kingdom, and, indeed, of other countries and one of the arrangements I understand in regard to these lectures is that they shall be published in a very cheap form, so that in this way one's audience may be larger than that in this room. I had proposed to make a few remarks in regard to the history of bread-making, but after the introductory remarks of our Chairman I think I need do no more than briefly enumerate the three distinct stages. First; flour was mixed with water, baked and then eaten; the next great improvement was the discovery of leaven; both of these are very old methods for the treatment of flour and known to the ancients; and at the present day we have examples of both systems; we have bread without any ferment at all, as in parts of Spain, and we also have leaven bread in the North of Europe, but the next

great and important improvement was the use of yeast. This has occurred in more modern times, how many hundred years ago I know not, but still comparatively modern as compared with older methods.

AVERAGE COMPOSITION OF THE GRAIN OF CEREALS.

	Old	Wheat.	Barley.	Oats.	Rye.	Maize.	Rice.
Water.....	11.1	12.0	14.2	14.4	11.5	10.8	
Starch.....	62.3	52.7	56.1	54.9	54.8	78.8	
Fat.....	1.2	2.6	4.6	2.0	4.7	0.1	
Cellulose.....	8.3	11.6	1.0	6.4	14.9	0.2	
Gum and Sugar.....	3.8	4.2	5.8	11.3	2.9	1.8	
Albuminoids.....	10.9	18.2	16.0	8.8	8.9	7.2	
Ash.....	1.6	2.8	2.2	1.8	1.6	0.9	
Loss, &c.....	0.8	1.0	0.2	0.5	0.7	0.4	
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	

COMPOSITION OF WHEAT GRAIN ASH.

	Lawes and Gilbert.	Way and Ogston.
Phosphoric acid.....	49.68	45.01
Phosphate of iron.....	2.36	0.82
Potash.....	29.85	31.44
Soda.....	1.12	2.71
Magnesia.....	10.70	12.36
Lime.....	3.40	3.52
Sulphuric Acid.....	0.34
Carbonic Acid.....	0.02
Chlorine.....	0.13	0.13
Silica, &c.....	2.47	3.67
Total.....	99.21	100.02

Before studying the phenomena of bread-making, it will be necessary to study the composition of the cereals employed in bread-making. In the corner of the room there is a table taken from papers published by Messrs. Lawes and Gilbert, giving us the composition of wheat, barley, rye, oats, maize and rice.

I wish to draw your attention to some important points connected with these analyses. We may divide the constituents of the cereals of wheat, for example, into the mineral matter, and the matter which is not mineral, and to which we give the term organic matter. The mineral matter consists of phosphate of potash, and of magnesia, about one-half being phosphoric acid, one-third potash, and one-tenth magnesia. The organic constituents consist of what are termed carbo-hydrates, together with a small quantity of fat. I say carbo-hydrates, an expression used to indicate that in these kinds of bodies the carbon, the hydrogen, and the oxygen are united together to form the substance, starch for example, and that the hydrogen and oxygen are in the same proportion as in water, though they are not combined together as in water, and therefore, the expression carbo-hydrates is given to such bodies. These carbo-hydrates are the substances that yield heat to the body, and by so doing yield force, power. In addition to these we have the substances termed albuminoids. These are also spoken of as flesh formers. Now, it is perfectly true that this expression correctly describes the function they perform, namely, to repair the waste of the muscular tissue, but at the same time it is somewhat misleading, in that these flesh-formers are really used up in giving heat and force by their burning or oxidation in the body, only a comparatively small quantity being necessary for the waste of the muscular tissues, which is by no means so great as physiologists formerly assumed.

Starch occurs stored up in vegetable structures for much the same reason as fat occurs stored up in animal structures, namely, for future use; thus we find starch in bulbs, and in tubers. It is the starch yielding property of the potato which renders it chiefly valuable. We find it also in roots, such as turnips, and the beet-root; we find it, of course, in seeds, and lastly we find it in the thick leaves termed by botanists, cotyledons, the two thick leaves which in leguminous plants, such as the bean and the pea, form the largest part of the seeds. The whole of the matter inside the testa or skin of the bean really consists of the two thick young cotyledon leaves; thus we have various sources of starch. Starch, however obtained, will be found when ex-

amined under a microscope, with a proper measuring arrangement, to have different characteristic appearances, and also sizes. For example, the starch of wheat varies much from that of barley, and very much from rice. It is by the size, which can be accurately measured, and by the form or shape which we can note under the microscope that we are enabled to identify various starches.

Starch, as you know, does not dissolve in cold water, and indeed water, is used in the extraction of the starch after grinding the grain, or rasping the potato from which we are deriving the starch. But when to a mixture of cold water and wheat-starch a laundress pours boiling water, she raises the temperature, and the result is the starch cells burst. The outside of the cells is composed of woody fibre, and at this higher temperature it bursts, the internal contents of the starch cell then come out. To those contents we give the term granulose, which makes a paste with the hot water. This is an important point in regard to the digestion of starch. At a temperature of about 300° F. starch is converted into dextrin, or British gum. If, however, instead of employing that plan, you add to a thick starch paste a little ground malt, the ground malt will convert the starch paste into dextrin together with another product which I will refer to presently. But the dextrin formed in that way is not pure.

A still better plan is to make a mixture of 1,000 of starch with 800 of water, to which previously two parts of nitric acid have been added; you mix the two together, and this is afterwards air-dried, when it is revolved in a cylinder at the temperature of not higher than 220° to 230°, it is converted into dextrin, and it is in that way that the dextrin of commerce is now manufactured. You are all acquainted with the appearance of it, because you have all of you seen the 1d and 2d bottles of British gum; it is on the back of every postage stamp, and it is used very largely in the arts, in calico printing for example. Closely allied to starch and dextrin come cane sugar and maltose sugar. Cane sugar you know is derived from the cane plant, from the beet, or from the maple, its properties you are sufficiently well acquainted with, namely, that it is sweet and that it dissolves in water and crystallizes easily. Maltose sugar is what I was referring to just now when I said that on the addition of a little malt to starch paste there was another product formed besides dextrin, and that other product is maltose, having the same centesimal composition as cane sugar.

Maltose sugar was discovered by Debrunfaut, and was afterwards the subject of experiment and study by Musculus, but it was not until comparatively recently, owing to the researches of Mr. O'Sullivan, of Burton-upon-Trent, that we really understood the nature of the change that took place by the action of these albuminoid bodies, such as we find in malt, upon starch paste. He showed us that a starch solution is acted upon by the diastase, as it is called, of the malt, and that takes up water and forms maltose sugar and dextrin, and maltose sugar having the same formula as cane sugar. This process continues, and more maltose is formed by the action of the diastase upon the more complex dextrins which are formed at first. Ultimately, however, a large portion of maltose is formed, and a very small quantity of dextrin, and under the most favorable conditions it is possible to convert the whole of the starch into maltose sugar. The maltose sugar thus made, dissolves in water, it is slightly sweet to the taste, and it does not crystallize in the way that cane sugar does, and it is much more difficult to obtain in a crystalline form. Maltose sugar is readily acted on by the yeast ferment.

HADN'T BEEN PRESENTED.

It was at a Staten Island hotel. There was a guest at table trying to get some breakfast. There was likewise a new table girl—very new as to her duties, not exactly new in years.

"Mary, may I trouble you for a cup of coffee?" said the guest, who was trying to get some breakfast.

The girl stares calmly out of the window, drumming the Devil's tattoo with variations.

"Mary! I would like a cup of coffee, if you please."

The obdurate female still ignores the summons.

"Mary! Bring me a cup of coffee!"

With a jerk she squares about, and in a tone that sends amateur blizzards playing leap-frog up and down his congealed vertebrae she ejaculates:

"My name is not Mary! My name is Mrs. Ziegenbuss!"

As soon as the crushed guest could catch his breath, he stammered:

"I beg your pardon that I did not have the pleasure of knowing your name. Will you kindly present my compliments to the proprietor, and ask him to do me the honor to personally present me to his table girls, his chambermaid, laundress, and cook!"—Drake's Magazine.



THEY MUST ALL HAVE IT.

"Paw Paw, Mich., Oct. 29, 1884.
Messrs. G. S. Cranson & Son,
Silver Creek, N. Y.

Gents: Have been running Shucker about two weeks; have ground over two thousand bushels Buckwheat; Farmers are coming from all over the country with their Buckwheat and we are getting orders for flour from every direction. Every miller in this part of the country is coming to see our work and all say they never saw anything to equal it, and all are talking of getting your Shucker and are enquiring the price. We give them your circular prices. One miller told me an agent offered him same size Shucker as ours for \$125.00, I told him you do not sell for that money, you can just as well get full price in this part of the State. They must all get Shuckers around here or stop grinding Buckwheat, that is settled." WISE & SMITH.

N. B.—The agent in question was probably mistaken in the size or was selling a second-hand machine, as our machines are uniformly sold at the prices named in our circulars.

G. S. CRANSON & SON.

HOW DOES THIS SUIT?

"Cooch's Bridge, Del., Aug. 25, '84.
Messrs. Kreider, Campbell & Co.,
Philadelphia, Pa.

"Gentlemen: Your machine was sent here against an —, on condition that we should keep the best, and we tried each machine, and are frank to say that if your machine cost us \$500 and the other was offered us as a present we should take yours, as we cannot find a fault with it. The above machine has a capacity of 50 bushels per hour."

We think best not to publish name, but it will be given upon application. Address, KREIDER, CAMPBELL & CO. Philadelphia, Pa.

BOLTING CLOTH.

Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

CASE MANUFACTURING CO.,
Columbus, Ohio.

Office and Factory, 5th Street, north of Naughtan,

SPECIAL ADVERTISEMENTS.

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1½ cents per word for one insertion, or 4 cents per word for four insertions. No order taken for less than 50 cents for one insertion, or \$1 for four insertions. Cash must accompany the order. When replies are ordered sent care of this office, 10 cents must be added to pay postage.

A CHANCE.

A reasonably sure method of making money. Weekly paper free to investors. E. H. MASON, 285 S. Jefferson street, Chicago, Ill. 274

FLOUR MILL FOR SALE.

Water power. On railroad track. First-class order. Good wheat country. For information address, NATIONAL STATE BANK, Boulder, Col. 262

MILL FOR SALE.

A steam feed mill located near Ridgefield, McHenry Co., Ill. In perfect running order, with a good trade. Will sell cheap. Address, C. H. ORMSBY, Ridgefield, Ill. 2538

A BARGAIN.

One 16-inch under-runner, full iron frame, blidings mill, made by C. C. Phillips, Philadelphia. It is brand new, has never been used, and will be sold at a big bargain as I have now no use for it. Address C. 91, care THE MILLING WORLD, Buffalo, N. Y. tf

YOU CAN BUY THESE CHEAP.

Three McCully Corn Cob Crushers. The above articles are brand new, in perfect condition, just as they left the factories, and will be sold very cheap for cash. Address S. 30, care THE MILLING WORLD, Buffalo, N. Y. tf

FOR SALE.

A fifty-barrel steam flour mill, 3 run of burrs and five sets rolls, with other necessary machinery; all nearly new, and doing good work. An upright Payne 50-horse power engine. Price, \$10,000; terms easy. J. H. DEARBORN, Silver Lake, Kan. 251

A GOOD CHANCE.

Valuable water power and buildings to rent in Lockport, N. Y. About 1½ acres of land, on which are stone buildings, with slate roof; connected; three stories high; 151x25 feet on the ground, with 140-horse power Leffel turbine water wheel. Will be rented or sold on liberal terms. Apply to L. A. SPALDING, Lockport, N. Y. 262

FOR SALE CHEAP.

One 6-horse power engine and 10-horse power boiler, all complete, price, \$350; one 8-horse power engine and 10-horse power boiler, price, \$375; one 10-horse power Portable complete, price, \$350; one 10-horse power Russell Traction, price, \$500; one 4-horse power vertical engine, price, \$120. Call or address for particulars EZRA F. LANDIS, Lancaster, Pa. 262

FOR SALE.

A four-run New Process water power flouring mill, and 180 acres of very choice land; 40 acres of young timber. Situated in Colfax county, Neb. Mill in good repair. A never-failing water power. All facilities for making first class flour. A good chance to do a first-class paying business. Owners desire to go into other business. This property will be sold at half its cost. Address, J. A. GRIMISON, Schuyler, Colfax county, Neb. 17tf

SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1½ cents for each additional word. Cash with order. Three consecutive insertions will be given for the price of two.

SITUATION WANTED.

By a millstone dresser and practical flour miller, (English) or grain inspector. Address, GEORGE WELLS, 140 (new No.) Broadway, Rochester, N. Y. 2628

SITUATION WANTED.

A married man, who can furnish recommendations from burr and roller millers, wants a situation. Will guarantee satisfaction as to work. Am not out of employment, but wish to change on account of poor water. Am advised by doctors to change my location. J. JERABEK, Hardinsburg, Breckenridge County, Ky. 262

WILHELM & BONNER,
Solicitors of Patents,
Attorneys and Counselors in
Patent Causes.
No. 284 Main St., Buffalo, N. Y.

The Best Conveyor Flights
and Cogs. The Best
ELEVATOR CUPS



Prices. Send for Circular.
A. H. FAIRCHILD & SON,
North Bloomfield, Ont. Co., N. Y.



PUBLISHED EVERY THURSDAY BY
THE AMERICAN INDUSTRY PRESS
 (LIMITED.)

OFFICES, LEWIS BLOCK, SWAN STREET,
 BUFFALO, N. Y.

G. B. DOUGLAS, - - Managing Editor.
 THOS. McFAUL, - - General Agent.

SUBSCRIPTION.

In the United States and Canada, postage prepaid, \$1.50 Per Year, in advance; can be remitted by Postal order, registered letter, or New York Exchange. If currency is enclosed in unregistered letter, it must be at sender's risk.

To all Foreign Countries embraced in the General Postal Union, \$2.25 Per Year, in advance.

Subscribers can have the mailing address of their paper changed as often as they desire. Send both old and new addresses. Those who fail to receive their papers promptly will please notify at once.

ADVERTISING.

Card of Rates sent promptly on application. Orders for new advertisements should reach this office on Tuesday morning, to insure insertion in the week's issue. Changes for current advertisements should be sent so as to reach this office Saturdays.

EDITOR'S ANNOUNCEMENT.

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with any manufacturing or mill furnishing business. Its editorial opinions cannot and will not be influenced by a bestowal or refusal of patronage. It has nothing for sale, but its space to advertisers and itself to subscribers.

Entered at the Post Office, at Buffalo, N. Y., as mail matter of second-class.

MILLERS' ASSOCIATIONS.

NATIONAL.....S. H. Seamans, Sec'y., Milwaukee, Wis.
 CALIFORNIA.....F. J. Parsons, Sec'y., Oakland.
 ILLINOIS.....C. H. Seybt, Sec'y., Highland.
 INDIANA.....Jos. F. Gent, Pres't., Columbus.
 IOWA.....J. S. Lord, Sec'y., Ogden.
 KANSAS.....O. W. Baldwin, Sec'y., Ottawa.
 KENTUCKY.....W. H. Wherritt, Sec'y., Lancaster.
 MARYLAND.....J. Olney Norris, Sec'y., Baltimore.
 MICHIGAN.....W. Hibbard, Sec'y., Grand Rapids.
 MINNESOTA.....Frank Pettit, Sec'y., Minneapolis.
 MISSOURI.....David B. Kirk, Sec'y., St. Louis.
 NEBRASKA.....C. D. Smith, Sec'y., Lincoln.
 WISCONSIN.....S. H. Seamans, Sec'y., Milwaukee.
 TEXAS.....Mitch. Gray, Sec'y., Dallas.
 PENNSYLVANIA.....Landis Levan, Sec'y., Lancaster.
 OHIO.....Robt. Colton, Sec'y., Bellefontaine.
 NEW YORK.....J. A. Hinds, Sec'y., Rochester.

OUR CLUBBING LIST.

NOTE—You can save money by availing yourself of the following offers. You can please every member of your family by accepting one or more of the following offers. To save money, and at the same time make the family happy, ought to be the main object of every married man's life. See how you can do this.

Take these for Yourself.

THE MILLING WORLD, per year.....\$1.50
 WITH
 The Builder and Woodworker.....(\$1.00 per year) 2.00
 American Architect, weekly.....(6.00 " ") 6.50
 American Architect, monthly.....(1.75 " ") 2.75
 American Machinist.....(2.50 " ") 3.50
 Mechanical Engineer.....(2.00 " ") 3.00
 American Agriculturist.....(1.50 " ") 2.50
 The Country Gentleman.....(2.50 " ") 3.50

Take these for your Family.

THE MILLING WORLD, per year.....\$1.50
 WITH
 Harper's Magazine.....(\$4.00 per year) 4.50
 Harper's Weekly.....(4.00 " ") 4.70
 Harper's Basar.....(4.00 " ") 4.70
 The Century.....(4.00 " ") 4.50
 Frank Leslie's Illus. Newspaper.....(4.00 " ") 4.50
 Frank Leslie's Popular Monthly.....(2.50 " ") 3.50

Take these for your Children.

THE MILLING WORLD, per year.....\$1.50
 WITH
 St. Nicholas.....(\$3.00 per year) 4.00
 Harper's Young People.....(2.00 " ") 3.00

THE demand for lake tonnage increased at a fair rate during the past week, and as the coal freights from Buffalo have advanced, vessels are more eager to charter for this port than formerly. The principal article shipped is corn.

THE original story of the wood flour of the Adirondacks being used for the adulteration of flour has not yet traveled over the whole circuit, it appears; it certainly has undergone a few slight changes. The latest notice of it is printed in "Die Muehle," the leading German milling journal, quoting an exchange which states that this wood flour is used for technical purposes or "only" for the adulteration of flours which are delivered to the Army or to the Indians. It is rather

surprising that Die Muehle should print such sensational trash without any comment whatever, after all the American journals have clearly refuted the fallacy of this preposterous story long ago.

THE MILLING WORLD has to acknowledge the receipt of a copy of the annual report of the Chamber of Commerce of Pittsburgh, Pa., on the mercantile, manufacturing and mining interests of the city. As is to be expected, the report deals extensively with the iron, steel, coal, petroleum and other industries; the natural gas, the latest acquisition to the wealth of the section is carefully elaborated, but besides the fact stated that the thirty-two counties in the vicinity of Pittsburgh produced during the year 21,511,400 bushels of corn, 17,830,300 bushels of oats and 10,167,200 bushels of wheat, we find nothing which has any direct or indirect bearing upon the flour and grain trade of the country.

A SERIES of experiments have been made by the Department of Agriculture at Washington, to determine the capacity of flour for absorbing or losing moisture according to varying atmospheric conditions, and the following interesting observations were made. The series of five tests comprised a number of flours from Minneapolis, all milled by the roller process from hard spring wheats. Three of the five samples contained nearly 8 per cent. of moisture originally, one a little over 9, and one over 13. The day of exposure was rather dry for Washington, but evidently moist as compared with the localities from which all the flours but one had come; there was a large gain in the part of three, a small gain by the Pillsbury "A," and a loss by the only one holding originally a large amount of moisture. One day's exposure was sufficient to equalize the moisture in all the flours, and throughout the succeeding weeks they all appeared to be susceptible to the changes in the condition of the atmosphere in about the same degree. The importance of this knowledge commercially, is, of course, apparent.

IF reports are true, there is a movement on foot among European distillers for the purpose of gaining their independence from American corn speculators in the near future. The project contemplates nothing less than to build a connecting line between the Mexican National railroad and Corpus Christi, contract with the farmers along the line to purchase their surplus corn and induce them at the same time to increase their production by improved American agricultural implements to be furnished to them and which are to be paid for in annual instalments. Finally the corn is to be shipped to Europe in the anticipation that an abundant supply can thus be had at fixed prices. A Syndicate for the purpose has already been formed, according to Mexican dispatches, who have proposed the scheme to the Mexican railroad company for consideration. On the face of it this would seem to be a severe blow to that "American corn speculators," but when we consider that the percentage of corn exported forms only a very small part of that demanded for home consumption, the American corn producer need not allow his sleep to be disturbed by the reported enterprise.

THE persistency with which the question of aerial navigation is pursued, deserves to be and will unquestionably be crowned with success at some future date. France announced the problem as solved recently, but competent authorities give their opinion that the final solution is far from being attained. Germany is experimenting on the same line and for war purposes only, in consequence of which the reports are very meagre and

unsatisfactorily. The latest intelligence now comes from Russia where experiments in aerial navigation are made on a great scale, and where a cigar shaped balloon of 200 feet in length and 80 feet in height is being built for the purpose. Its inventor claims that he is able to transport sixteen men and 250 lbs. of ballast at the rate of 160 miles an hour. The experimental trip is to be made some time during this month. THE MILLING WORLD wishes success to the undertaking. What joy if we simply had to step from our office window and travel at our pleasure, wherever we wanted to go, at the rate of 160 miles an hour, visiting our numerous friends as we passed over the country. No dust, no noise, no vibration, no sea sickness, temperature during summer raised or lowered at will, who would not wish success to the inventor of such improved means of the travel of the future?

THE question of tariff or free trade in agricultural products seems to take the precedence over everything else in France just now. As a revision of the existing tariff laws is one of the tasks which the French Chamber will be called upon to perform in the immediate future, there are no end of suggestions in newspapers or in pamphlet form, to show on the one hand that free admission of breadstuffs is injurious to the interests of the country, and on the other hand that anything which tends in any way to increase the price of the necessities of life is detrimental to the welfare of the country. The latest discussion, carried on in a fair spirit, is given by the "Debats;" it points out the disastrous effects which will follow any increased tariff in cereals and cattle, and which, instead of improving the conditions, will only tend to make France more than ever less able to compete with foreign countries. Duties on eatables means an increased price to the consumer or a smaller quantity consumed. If the French laborer has to eat less in order to make both ends meet, the demand will be correspondingly smaller, less food products will be sold, and the total price will not be changed. If he desires to eat the same food at the increased price, his employer will have to raise his wages sufficiently to enable him to purchase the desired quantity. The "Debats" is of the opinion that the whole discussion is thrown out as a bait to the agricultural population to secure their votes in the coming election.

UNDER our present system of commercial transactions, figured down to the closest possible margin, and in view of the large reduction in the charges of transportation which have taken place during the past years, the question of one cent per bushel more or less in the export expenses of large ports forms an item well worthy of consideration. As was announced in THE MILLING WORLD some time ago, a movement against the retention of the elevator tax of New York city of one cent per bushel was instituted by the Produce Exchange, and a committee, appointed at that time for the purpose, presented a report on Thursday last. The general conclusions arrived at by the committee are that the tax should be removed, or if not removed, should at least be modified. The committee did not care to dwell upon the absurdity of a charge of one cent per bushel, which it considered totally impracticable, as demonstrated by the work of over two years, when no such charges were made and from 20 to 35 per cent. of all the grain handled by railroads would be delivered direct to ocean bound vessels at the saving of the expenses of harbor deliveries. It was claimed that a great diversion of grain to the water routes had taken place of late, largely due to this tax, and not entirely due to the free canal, and after care-

fully considering all the existing conditions the committee emphasizes the necessity for the removal of the tax. The question now is how far will the great trunk lines heed the report.

AT the present time when so many speak about curtailing the wheat production and advocate the cultivation of other products, a report of the Agricultural Department at Washington on the "Northern sugar industry" furnishes all the available data with regard to the sorghum plant in this country. Although sorghum was introduced into the United States thirty years ago, the total amount of sugar produced during the past year has been less than one million pounds. This is largely due to the unscientific methods pursued, for real progress in the industry has only been made during the past three years. Says the chemist of the Department, Prof. H. W. Wiley. "I do not believe that the manufacture of sugar from sorghum as at present carried on, will prove financially successful throughout the more northern portions of our country. The process of manufacture is imperfect and wasteful, and not one-half of the sucrose in the juice is usually obtained as crystallized sugar. The future success of the industry will depend upon the following conditions: A careful selection and improvement of the seed; a definition of the geographical limits of successful culture and manufacture; a careful improvement of the soil; improved methods for obtaining the largest amount of sugar from the cane, and a systematic utilization of the by-products." From this it seems that our northern and northwestern wheat fields at least are designed to cultivate wheat yet for some time to come, although it cannot be doubted that in the near future, a large portion of the vast prairie region of the middle states will be converted into sugar plantations which will grow sugar in quantities sufficient for home consumption.

AN enthusiastic friend has been laboring to demonstrate to us that the country is just on the eve of entering upon a prolonged era of industrial activity and prosperity such as has never before been experienced, and his premises are quite plausible. He argues that for two years past consumption of all manufactured goods has been decreasing steadily and rapidly, and production has, almost as rapidly, fallen off. He asserts that stocks of manufactured goods are principally in the hands of retailers, who will not stock up anew until these goods are largely disposed of, and that, immediately after the presidential question is settled, purchases by the consumers will begin and, in staple articles, will be quite brisk necessarily and largely depleting stocks, which will then have to be replenished. "We are becoming," he says, "accustomed to low prices and values. Almost every article of necessity or luxury can be produced to-day for less than could be done two years, or even one year ago. This does not signify that the per cent of profit will be less, but on the contrary the ability to purchase will be greater, and this ability to purchase, originating with the agricultural classes, who, despite low prices for their crops, are rapidly converting them into money, will stimulate activity among manufacturers, enabling them to give employment to labor, thus extending to it the power to purchase." He further says that more than one-half the railroads in the country are suffering because of imperfect and worn-out equipment. This must and will be remedied, thus creating an active demand for lumber, iron and labor. The prospect for the future, as our friend puts it, is very pleasing and rosy-hued. The only drawback to it, is that our friend is out of a job, and the landlady of his boarding house intimates that immediate cash is preferable to golden promises.

ESTABLISHED 1856.

EUREKA GRAIN CLEANING MACHINERY | GENUINE DUFOUR BOLTING CLOTH

OVER 18,000 MACHINES IN USE.

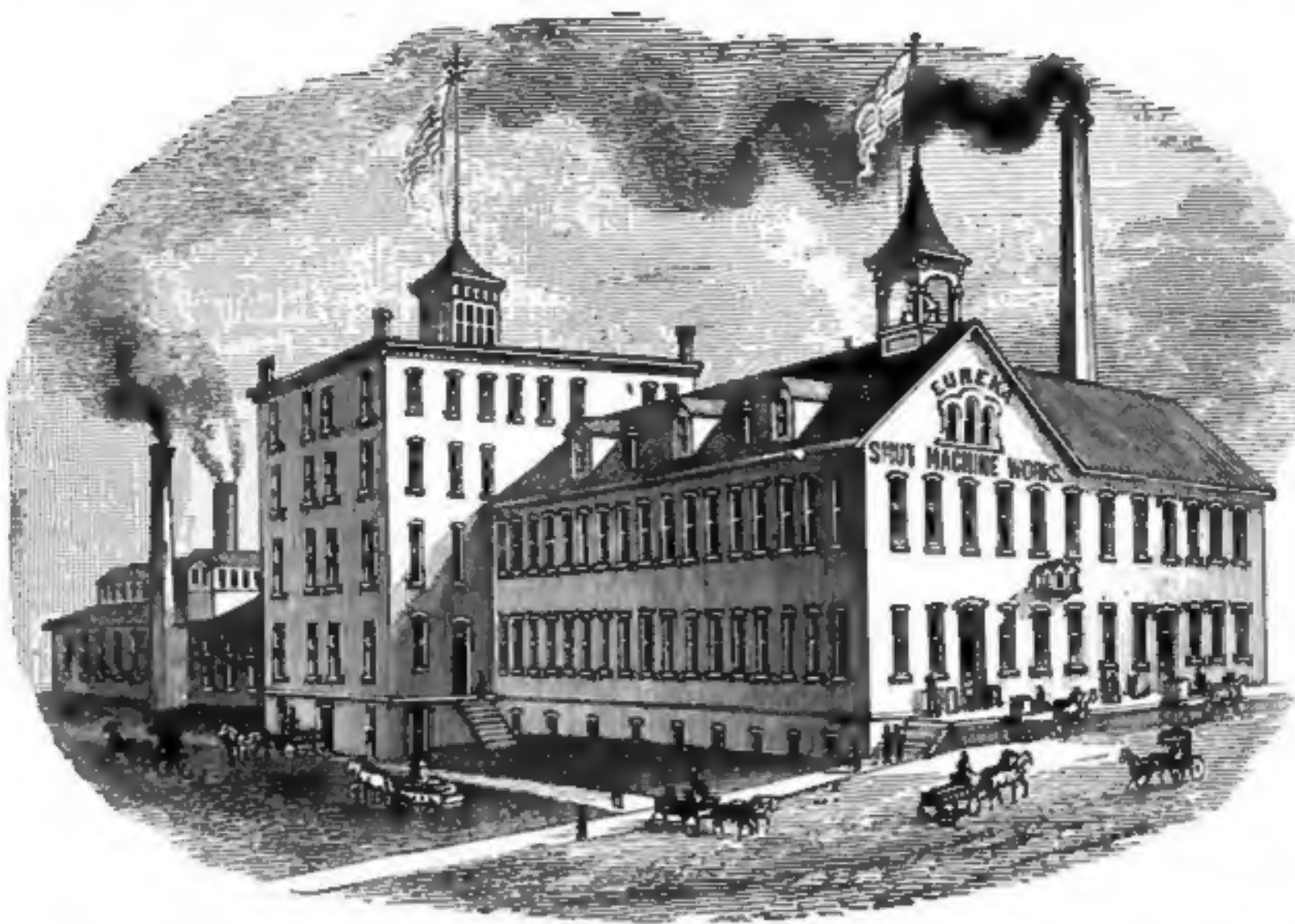
OUR LINE COMPRISES

The Eureka Separator,
The Eureka Smutter and Separator,
Eureka Brush Finisher,
The Eureka Magnetic Automatic Separator,
Silver Creek Flour Packer.

Our establishment is the oldest, the largest and most perfectly equipped of its class in the world, and our machinery is known and used in every country where wheat is made into flour.

HOWES & EWELL,
SILVER CREEK, N. Y.

European Warehouse and Office: 16 Mark Lane, London, E. C. England.
Gen. Agency for Australian Colonies and New Zealand.
Thos. Tyson, Melbourne, Victoria.



We handle this justly celebrated cloth in large quantities, and can fill all orders upon receipt. For such as may prefer a cheaper grade, we offer our

ANCHOR BRAND BOLTING CLOTH.

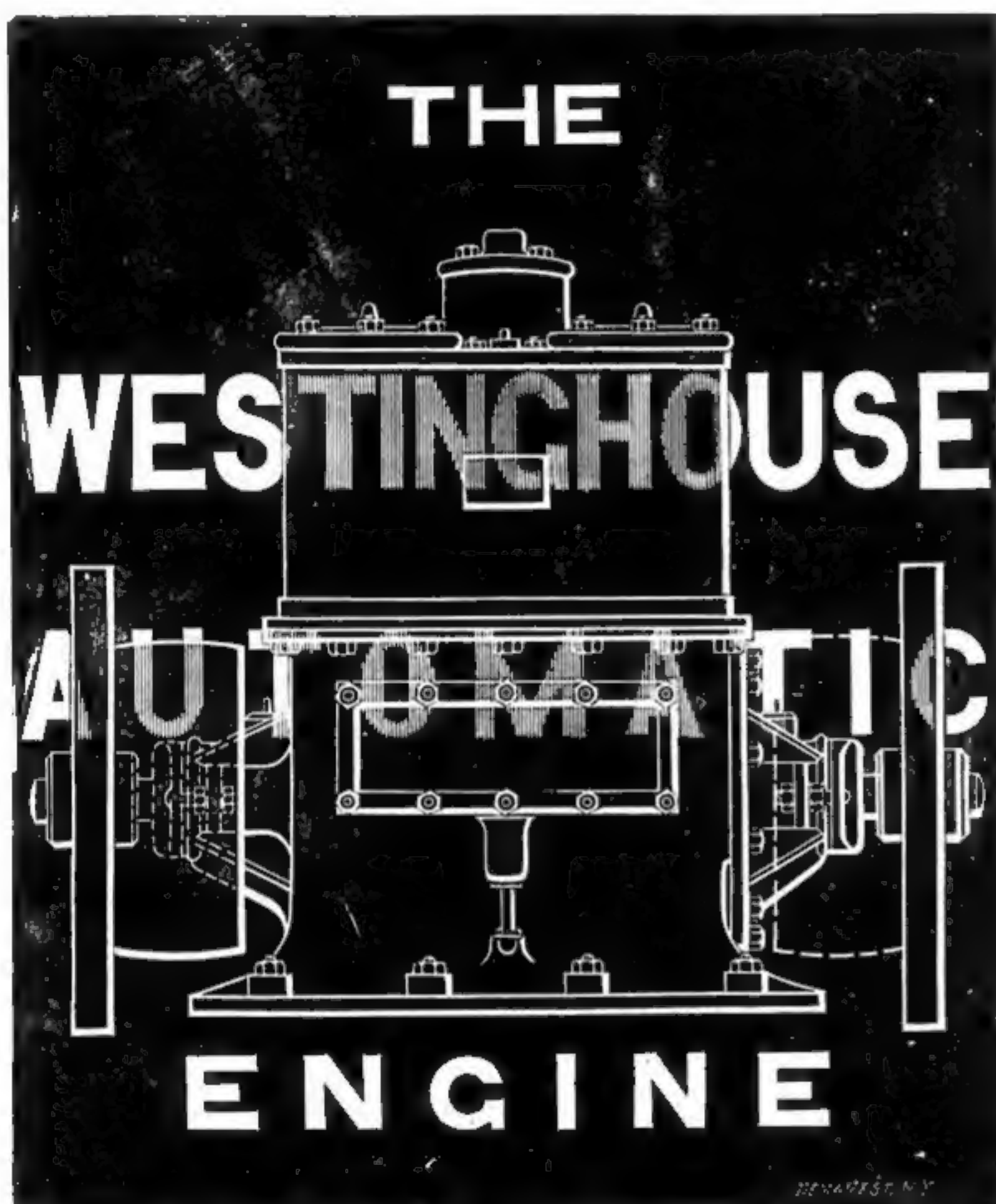
Guaranteeing it to be equal in every particular to any other cloth on the market, except the Dufour. We have handled it for years, have sold thousands of yards of it, and know it will fully sustain our representations.

Send For Samples of Cloth, Our Style of Making Up, and Prices.

HOWES & EWELL,
SILVER CREEK, N. Y.

4 to 400 HORSE POWER The MILLER ROLLER MILL

Unequalled for Regulation and Low Cost of Operation.



Sales 2,000 Horse Power Per Month.

SEND FOR ILLUSTRATED CIRCULAR AND REFERENCE LIST.

The Westinghouse Machine Company
PITTSBURGH, PA.

SALES ROOMS: 94 Liberty Street, New York. 401 College Street, Charlotte, N. C. 401 Elm Street, Dallas, Texas. 53 South Market Street, Nashville, Tennessee. Fairbanks, Morse & Co., Chicago, Cleveland, Cincinnati, Louisville and St. Paul. Fairbanks & Co., St. Louis. Indianapolis and Denver.

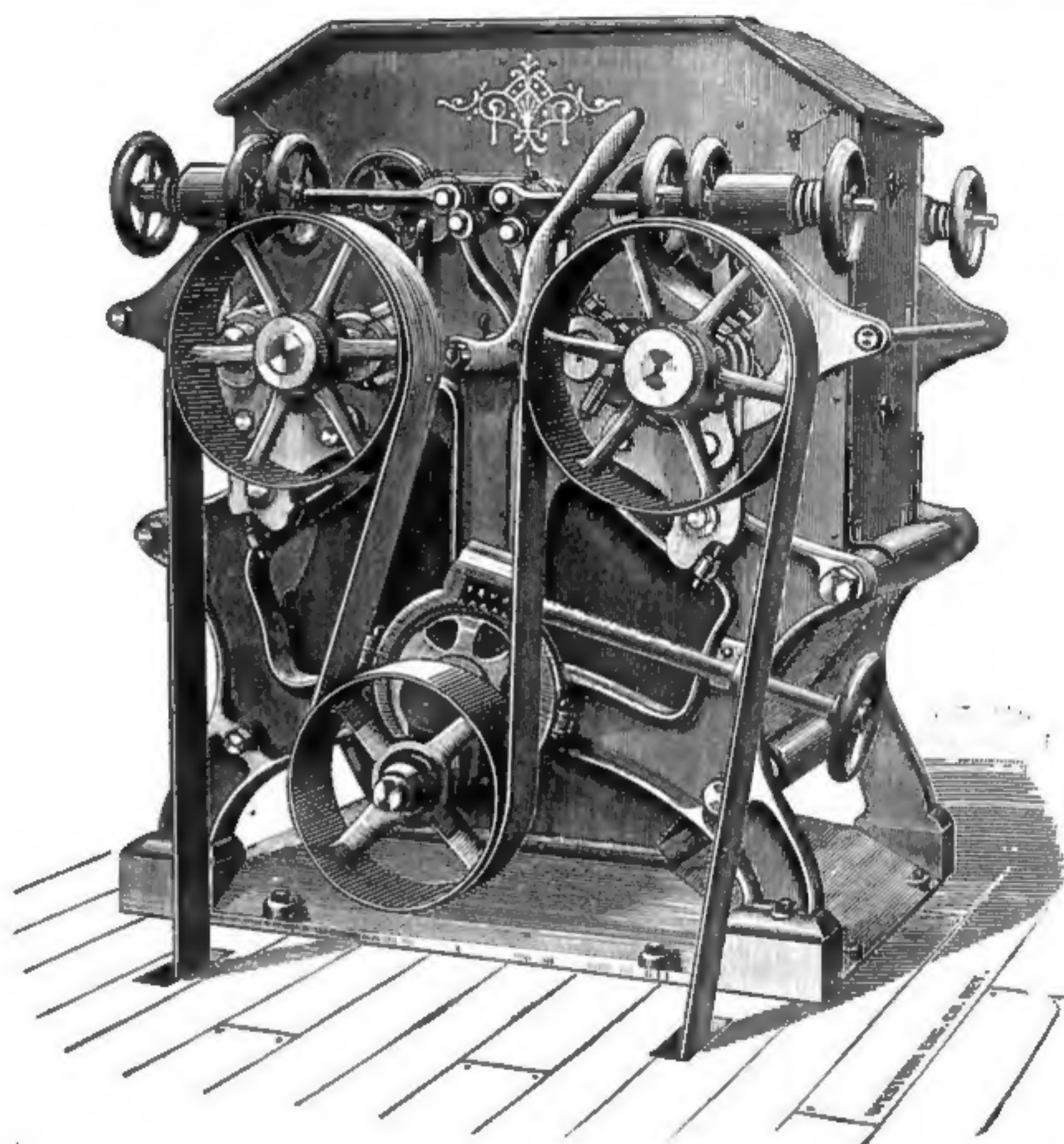
GOVERNORS { For Water } Cohoes Iron Foundry & Mch. Co.
Wheels Send for Catalogue. Cohoes, N. Y.

GEHRICH'S PATENT GLASS TUBE JOINTS
AN IMPORTANT INVENTION FOR MILLERS.



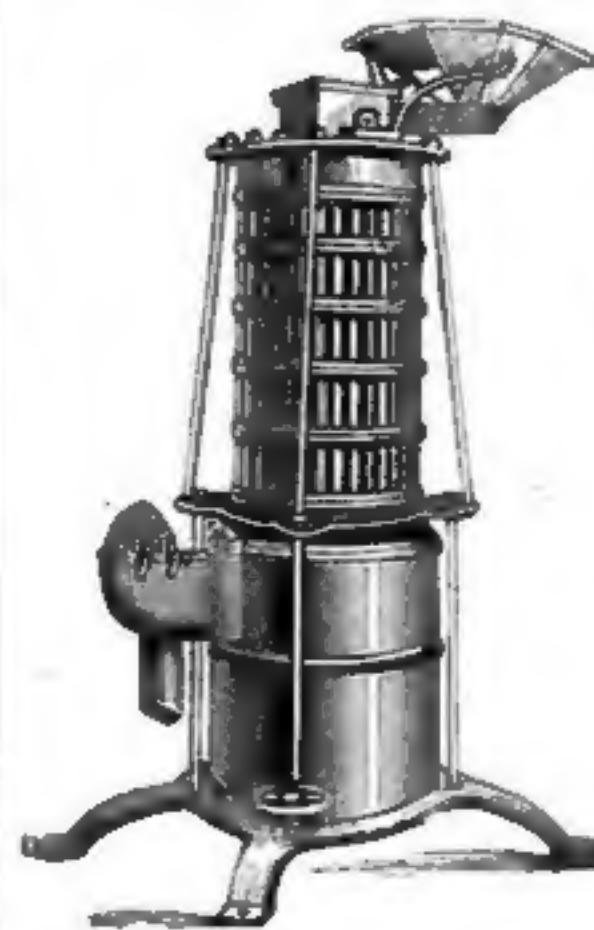
This invention consists of a Glass Tube Joint, which can be made to correspond in size to and be inserted in any tin spout used to convey grain, meal, etc., in the operation of Grinding Flour and other substances. A section of the spout is thereby *Rendered Transparent*, enabling the miller, or any one passing by, to see at a glance whether the contents of the spouts are properly running. By the use of this appliance the necessity of frequently opening spouts is avoided, and the consequent saving of time and flour is very important in an economical point of view. These Glass Tube Joints have given the most complete satisfaction, and are esteemed as an indispensable requisite wherever they have been applied. Full information furnished on application to the inventor.

H. GEHRICH, 54 Rutgers St., NEW YORK CITY.



Has no superior. Universal Tightener, Automatic Feed, Tight Base, Noiseless, with Non-Cutting Corrugations. We also manufacture the Rider Wheat Break, which has no equal for 1st, 2d and 3d Breaks. Send for Reference and Circulars of our Machines.

THE MILLER CO., CANTON, O.
LORD BALTIMORE HOMINY MILL.



PATENTED SEPT. 28, 1880, AND JULY 26, 1881.

The Best, Most Durable, and Most Economical Machine.

The Lord Baltimore Hominy Mill is no experiment, but is in constant use and giving unexampled results in several large mills. Its capacity is greater than that of any other hominy machine, being from three to five barrels of Hominy per hour, and in preparing the corn for Grits, Pearl Mill or Corn Flour, five to six barrels per hour. It is built of the best materials. The various cages are composed of an aggregation of staves, so that in case any of the staves are broken, they may be easily repaired with little trouble or cost.

For Prices, and further particulars, address
C. S. DAY, Patentee & Manufacturer, KENT ISLAND, MD.

Please address all orders for Castings and Hullers to
JAMES McMILLAN,
Nut Washer and Bolt Manufacturer and Machinist,
151 NORTH STREET, BALTIMORE, MD.

WIRE BOLTING CLOTH—STEEL, BRASS AND TINNED

ESTABLISHED 1844.

Exclusive Manufacturers of the
"ACME"

STEEL TEMPERED

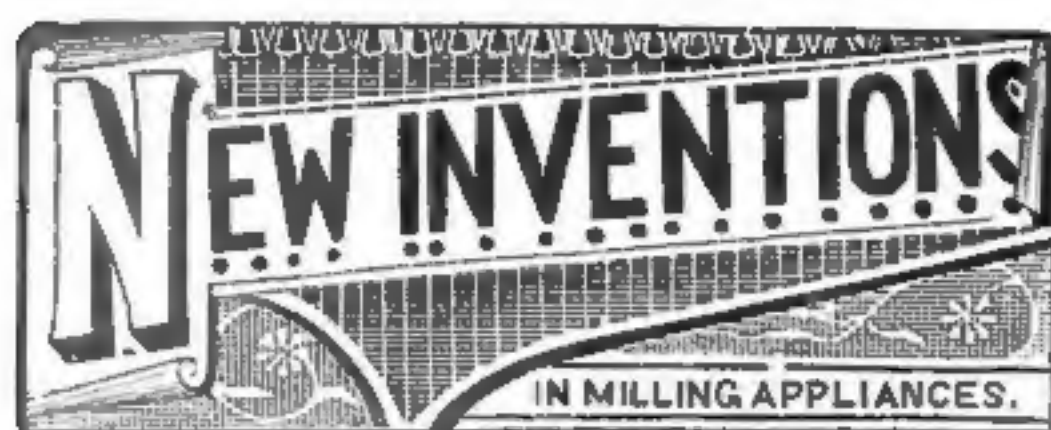
Battery & Bolting Wire Cloth.

Also Manufacturers of

Bran Duster Cloth, Plated Wire Mill Screen Cloth
Smut Cloth, Brass and Copper Wire Cloth.

A full line constantly on hand. Send for samples and price lists.

Brooklyn Wire Cloth Works, NO. 107 JOHN STREET, New York.



APPARATUS FOR SEPARATING DUST FROM THE AIR.

Letters Patent No. 306,757, dated Oct. 21, 1884, to Ralph Howarth, of Rochdale, County of Lancaster, England. Patented in England Dec. 14, 1881, No. 5,457; in Germany June 29, 1882, No. 21,426; in France July 1, 1882, No. 149,872; in Belgium July 1, 1882, No. 58,357, and in Austria Nov. 1, 1882, No. 24,770. This invention relates to improvements in apparatus for separating dust from the air discharged by or drawn from millstones, purifiers, or analogous machines; and the object of the improvements is to cause the flannel or filtering material fixed in the form of pockets, and generally employed in such apparatus, to be worked and expanded in a horizontal direction from one side of the frame to which it is attached through to the other side of the same frame, and to close the dust-laden-air inlet-opening during a part of such operation, for the purpose of producing momentarily a strong partial vacuum on the dust-laden side of the flannel, which assists in removing the dust collected thereon, thus keeping the pores of the flannel open and separating the dust from the air more effectually. Figure 1 is an end view of the machine. Fig. 2 is a plan in section of Fig. 1 on the line A A. Fig. 3 is a vertical section of the machine. Fig. 4 is a front view of the device for working the filtering material. Fig. 5 is a plan of the devices for working the inlet-valves and filtering material. The box *a*, Figs. 1, 2, 3, formed of wood, is divided into three vertical compartments, *b b* and *c*, by partitions formed of a framing, *a'*, and filtering material *b'*. The latter is arranged preferably in a zigzag shape, forming pockets *b'*, and suitably suspended and connected at alternate points to the frame *a'*. The compartments *b b* are for the reception of the dust-laden air drawn from millstones, purifiers, or other analogous machines, and the compartment *c* is for the escape of the purified air. A driving-shaft, *e*, situated at the end near the top of the apparatus, is carried by brackets *f f* and provided with two pulleys, *g* and *h*, and worm *i*, which latter gears into the worm-wheel *j*, fixed on the main shaft *k*. Throttle-valves *l l* are employed and situated at the sides of the apparatus, for the purpose of closing and opening alternately the dust-laden-air inlet-openings *m m*. Trunks *n n* are fixed in front of the inlet-opening *m m*, which convey the dust-laden air, by means of the inlet-openings *m m*, to the dust-receiving compartments *b b*. The main shaft *k* carries the cam *o*, which, during a part of its revolution, actuates the levers *p p*, the latter being connected by means of rods *q q* to the throttle-valves *l l*, in order to control the admittance of the dust-laden air at suitable intervals. Square shafts *r r*, provided with shaking-levers *d d* and levers *t t*, are arranged to rock in suitable bearings near or on the top of the machine. The extreme ends of the shaking-levers *d d* are connected to the pockets of the filtering material *b' b'* by means of small brackets forming hinges. These brackets are fixed on strips of wood, the latter being suitably fastened to the points of the pockets *b' b'*. A to-and-fro motion is imparted to the pockets by means of the pawl *v*, forming a part of the cam *o* on the shaft *k*, and acting alternately upon the levers *t t* when rotated, thus causing the shaking-levers *d d* to move the flannel or filtering material and expand alternately the pockets *b' b'* in com-

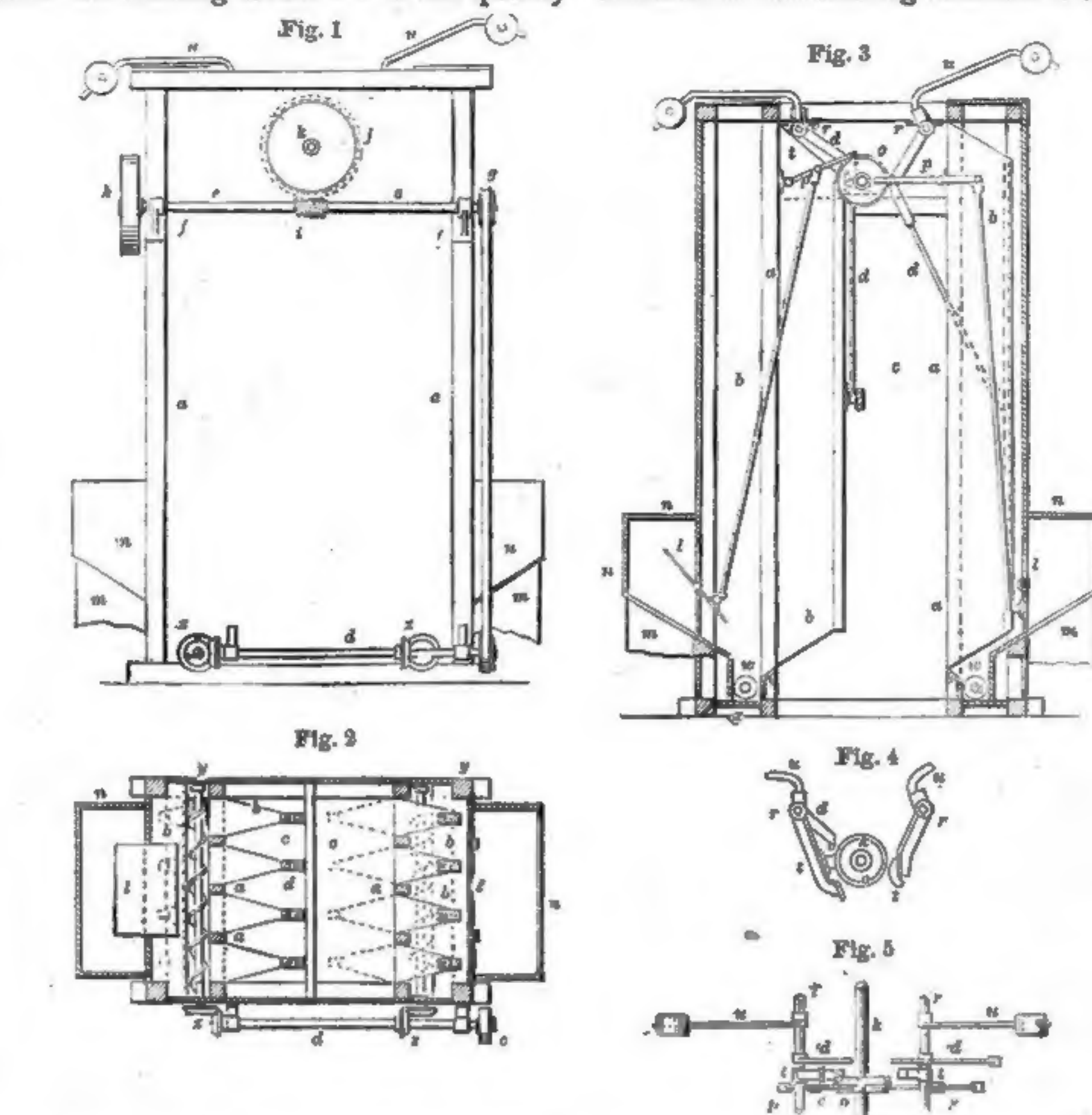
partments *b b* and compartment *c*. On the square shafts *r r* are also fixed levers *u u*, provided with weights, which, after the contact of the pawl *v* with the levers *t t*, cause the shaking-levers *d d* to fall quickly

is shaken, thus removing the dust collected thereon and keeping the pores of the flannel open for the purpose of the escape of the purified air. The dust which has collected on the filtering material is thereby

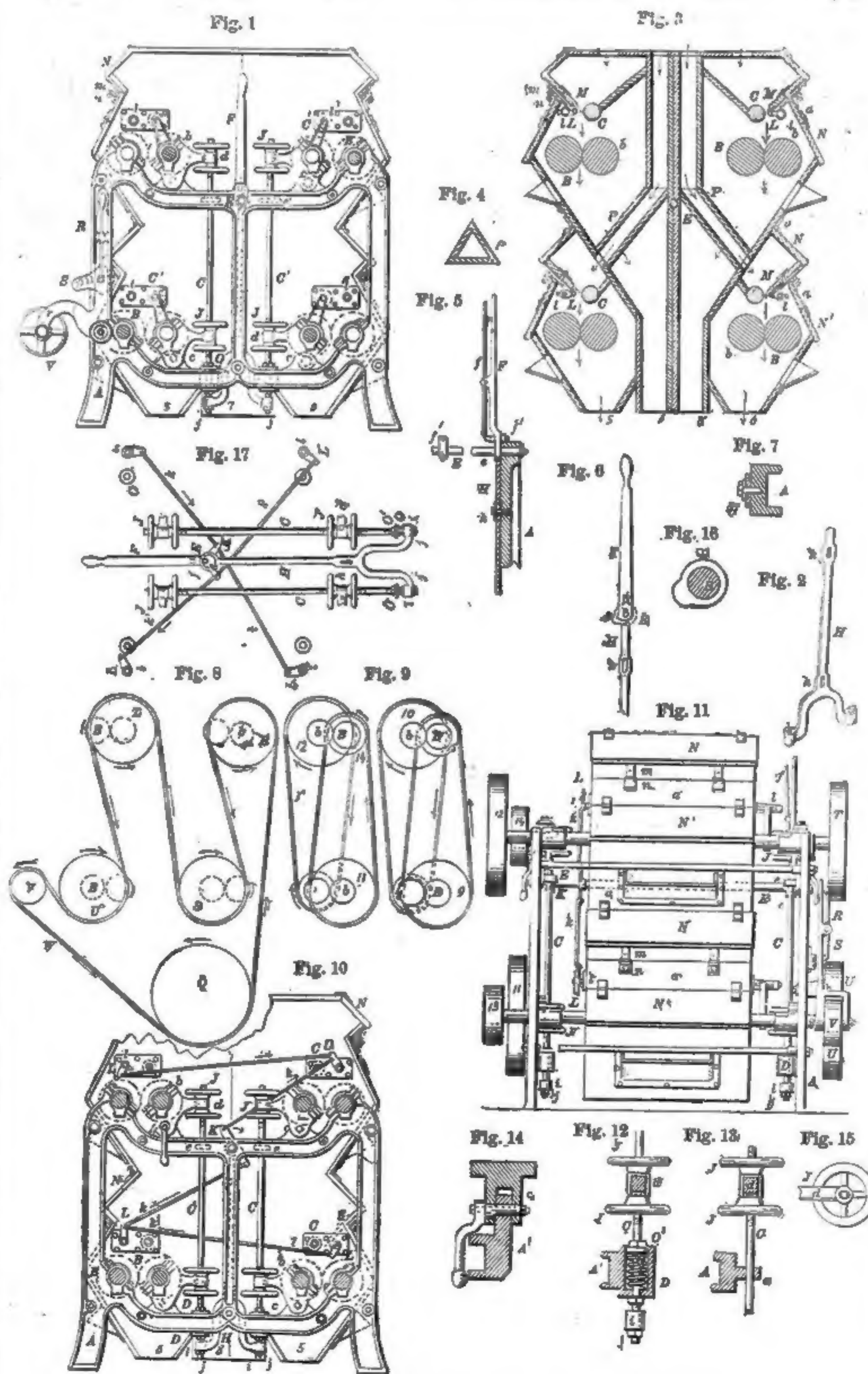
Archimedean screws *x x* receive motion by means of bevel-wheels *z z* and the cross shaft *d'*, situated at the lower end of the apparatus and driven by means of a belt and pulley *g'*, from the worm-shaft and pulley *g*. The action of the apparatus is as follows: The dust-laden air, after being drawn from the millstones, purifiers, or other analogous machines, is forced into the trunks *n n*. The inlet-valves *l l* are then opened alternately, and the compartments *b b* respectively receive a charge of dust-laden-air, which is forced against the pockets of the filtering material *b' b'*. The latter being at such time expanded in compartments *c*, separates the dust from the air and permits the purified air to escape into the compartment *c*. After a certain interval the inlet-valve of one compartment is closed and the shaking motion belonging to that one compartment commences its functions, and causes, first, the pockets *b' b'* to move and expand in the dust-laden-air receiving-compartment *b*, and afterward to fall quickly back to its former or original position in compartment *c*, causing a momentary vacuum, such vacuum and shaking effectually removing all the dust which has collected on the filtering material. The inlet-valve of that compartment is then opened and the dust-laden air readmitted.

ROLLER GRINDING MILL.

Letters Patent No. 306,945, dated Oct. 21, 1884, to Udolpho H. Odell, of Dayton, Ohio. This invention relates to improvements in roller mills, and has for its object to provide a novel arrangement and combination of devices whereby the grinding rollers are arranged in pairs—one pair directly above the other pair—whereby the movable journal arms of all the rolls can be adjusted and the slow rotating roll of one set can be driven by the fast rotating roll of another set. Figure 1 is an elevation of mill with the driving pulleys removed. Fig. 2 is a perspective view of the connecting rod for adjusting the rolls. Fig. 3 is a central vertical cross section taken on the same plane as shown in elevation in Fig. 1. Fig. 4 is a section on line *x x*, Fig. 3. Fig. 5 is an elevation, partly in section, showing the adjusting lever mounted on the through shaft. Fig. 6 is a side elevation of the adjusting lever. Fig. 7 is a section on line *y y*, Fig. 5. Fig. 8 is an elevation of the driving pulleys on one side of the machine. Fig. 9 is an elevation of the driving pulleys on the opposite side of the machine from that shown in Figs. 1 and 8. Fig. 10 is an elevation of the opposite side of the improved mill shown in Fig. 1, with the driving pulleys which are shown in Fig. 9 removed. Fig. 11 is a side elevation of machine. Fig. 12 is a detached sectional view of the spring and the lower end of adjusting shaft. Fig. 13 is an end elevation of the upper end of the adjusting rod and hand wheels on line *y' y'*, Fig. 1. Fig. 14 is a section of the frame work, showing the mode of pivoting the journal boxes of the adjustable rolls. Fig. 15 is a plan view of one of the adjustable wheels and arms of the removable rolls. Fig. 16 is a plan view of the cam on the through shaft for using the adjustable rolls. Fig. 17 is an elevation having a modified means of connecting adjustable rolls and feed cut-off devices. A A' represent the posts and frame of mill. It is represented in Figs. 1-8 and 10 as adapted to be used with two sets of gang rolls, the gang sets upon each side being duplicates one of the other. B represents the stationary rolls of each of the sets. *b* represents the movable rolls. The journal boxes of the rolls B are rigidly secured to the frame A, and the adjustable rolls *b* are each pivoted to the frame by ears *c* on the adjustable arms *d*, which arms are each provided with an elongated opening or eye, *d'*, as shown in Fig. 15. The adjusting arms *d* of each of the upper sets of rolls are connected by



PATENT NO. 306,757. APPARATUS FOR SEPARATING DUST FROM THE AIR.



PATENT NO. 306,945. ROLLER GRINDING MILL.

back and shake the filtering material. The inlet-opening *m m* being at such time closed by the throttle-valves *n n*, a momentary strong partial vacuum on the dust-laden side of the flannel is produced, which sucks the air through the flannel at the moment it

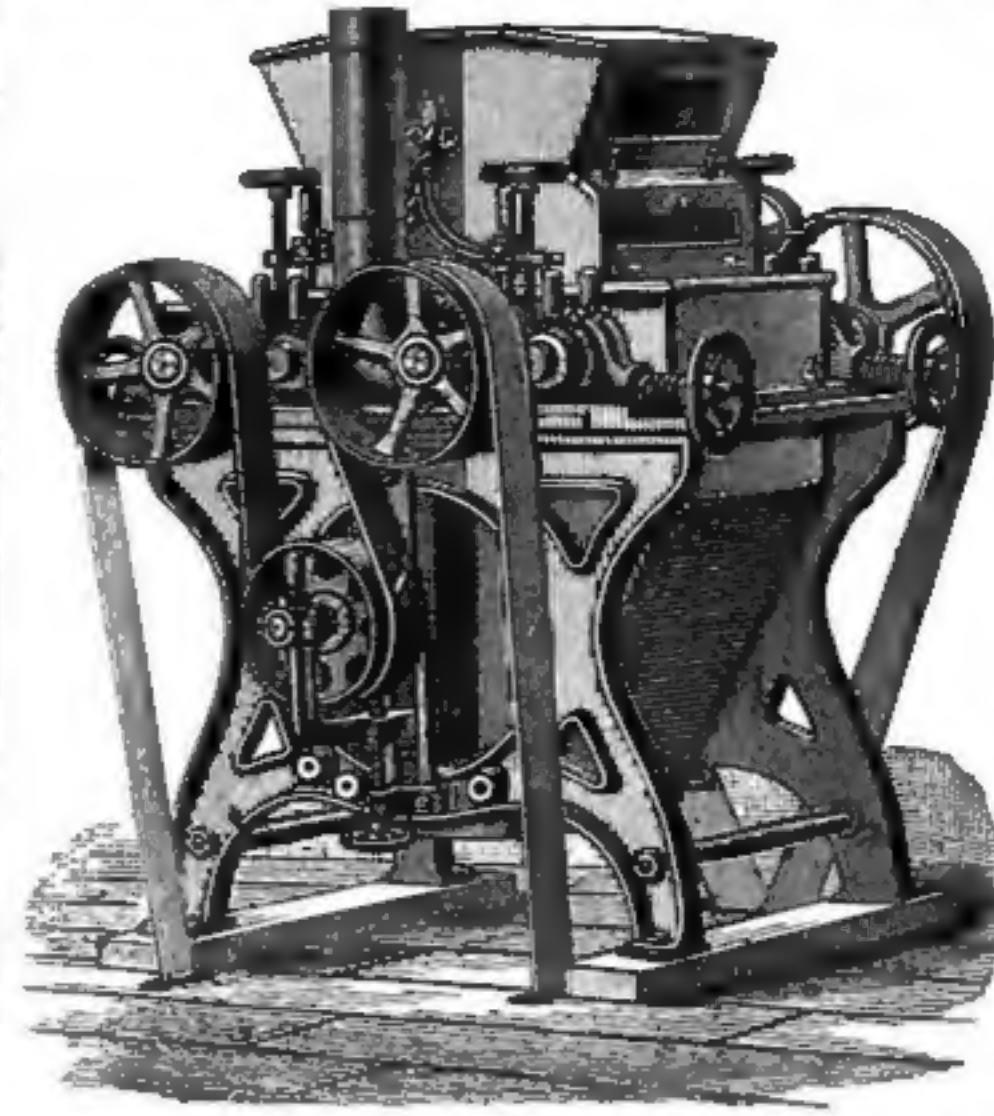
effectually removed thereof and falls into the hoppers *w w*, in which the Archimedean screws *x x* are caused to rotate, which delivers the dust to the end of the hoppers *w w*, and discharges the same through the exits *y y* into suitable receivers. The said

the vertical rods C on each side of the machine to the adjusting arms *d* vertically underneath them, the rods passing through the eyes *d'* of the adjusting arms *d*. These rods are held in vertical position by bearings *e* on the upper part of the frame of the machine, and by similar bearings in the spring housings D at the bottom, so as to allow vertical movement of the rods C. The adjustable rolls *b* are arranged upon each side of the machine in the same manner. E represents a through shaft, which passes from side to side through the frame of the machine, and is suitably journaled thereto. F represents a lever, which is keyed upon the said shaft E. It is provided with a spring latch and lock, *f f'*, for locking it in position. On the lower end of lever F is placed a cam, *e'*, the face of which engages with the bifurcated lever H, which is provided with slots *h*, through which pass pins *h'* to hold it vertically. *i* represents sleeves upon the lower ends of the forks of the bifurcated lever H, through which pass the vertical rods C, which are secured thereto by means of nuts *j*, these parts being duplicated on each side of the machine. *f''* represents a cam on the through shaft E, keyed upon the end opposite to that upon which lever F is keyed. By turning the lever F and rotating the shaft E cams *f''* and *e'* press down the bifurcated levers H, the forks of which are secured to the rods C, moving them vertically downward, and thereby moving the adjustable rolls *b* upon their pivots, thus spreading the rolls apart and stopping their grinding. A reverse movement of the lever F sets the rolls *b* up to rolls B, ready for grinding. J represents hand wheel nuts, tapped upon the rods C, which are screw-threaded to reverse them, so that the journal arms *d* on rolls *b* may be adjusted on the rods C to regulate the distance between the rolls B and *b*. K represents crank-arms keyed upon through shaft F, and *k k'* links connecting crank arms K with the crank-arms L, which are journaled to the frame of the machine at or near the hoppers 1 and 2. M represents hopper-gates hinged to the hoppers, as shown in Fig. 3. *m* represents adjustable springs, and *n* adjusting screws, against which springs *m* the gates respectively rest when open. The lower ends of these springs press a gate against its feeding rolls C'. The hopper gates are opened and closed by

means of shafts *l* and cranks L L', which are operated by the through shaft E, cranks K, and links *k k'*, which connect the crank-arms K with the shafts *l* of the hopper gates and open or close the gates as the crank K is moved by the lever F and connecting mechanism. *l'* represents the shafts of feed rolls C'. It will thus be seen that the several hopper gates will be simultaneously opened and closed with the adjusting of the rolls by a single movement of the lever F. It is also obvious that the gang sets of rolls can be used in multiples of two. Two different means of employing a spring upon vertical rods C for allowing the adjustable rollers *b* to yield to undue strain, as when a stone or other solid substance passes between the rolls are shown. D represents a housing attached to the frame, as shown in Figs. 10 and 12. O is a spring coiled around rod C, the tension of which is adjusted by means of a nut, O', which screws upon rod C. Instead of attaching the spring-housing to the frame A', as shown in Fig. 12, the springs may be placed on rods C below the frame between the sleeves on bifurcated arms *i* and the adjusting nuts O', as shown in Fig. 17. This plan of employing the springs has one advantage over the form shown in Fig. 1, in that the adjusting roller arms *d* by the movement of lever F do not act upon the tension of the springs, but directly upon the nuts O', whereas in the plan shown in Figs 1 and 12 the opening of the rolls is effected by moving the rods C against the tension of the springs. 1 2 3 4 represent the hoppers and feed spouts for feeding the grist separately to each pair of grinding rolls. P P' represent spouts leading to hoppers 3' and 4', which spouts are made of triangular shape, as shown in Fig. 4, so as to allow the charge ground by the two top pairs of rolls to pass freely over the spouts P and P' and to be discharged out of their respective spouts, 7 and 8, as shown in Fig. 8. It will be thus seen that each of these sets of rolls grinds its own charge independently of the other set in the same or adjacent gangs. Each feeding hopper and its delivery spout is independent of, and has no communication with, any of the other hoppers and delivery spouts, so that separate and distinct grains or grain products can be delivered to each pair of rolls, and discharged after being acted on by such rolls.

Rickerson Patent Improved Roller Mill

ORIGINAL 6-INCH ROLLER MILL.



*Requires Less Power to Drive,
Has Greater Capacity,
Better Granulation,
More Middlings*

THAN ANY OTHER ROLLER MILL.

Patent Exhaust Attachment for
taking away Generated Heat.

Positive movement of the rolls. We will furnish details upon application. Send for our Circulars before purchasing any Roller Mill.

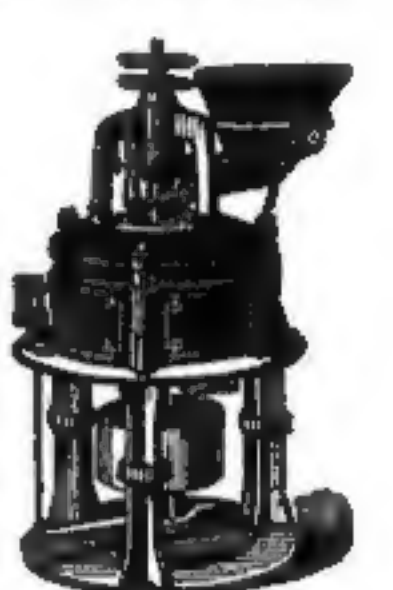
O. E. BROWN MFG. CO.,
GRAND RAPIDS, MICHIGAN.

Buckwheat Refiners & Portable Mills



**BREWSTER'S CELEBRATED
Buckwheat Refiner**
Is the only machine
whereby the greatest
yields of
**PURE, WHITE
SHARP FLOUR**
can be obtained.
The only reliable, practical and durable machine
IN THE WORLD.

THE POSITIVE ADJUSTMENT
**AND AUTOMATIC
MIDDINGS MILL**
Is Strictly Self-Protecting
The Best Adjustment in
the World.
And the only
Perfect Granulator
Grinds Cool, Self-Oiling, Great
Saving of Power.
**Simplicity and Durability
Combined.**



Satisfaction Guaranteed on all our Goods. Send for Descriptive Circular, giving Prices, Sizes, Terms, etc.

BREWSTER BROS. & CO. Unadilla, N. Y.



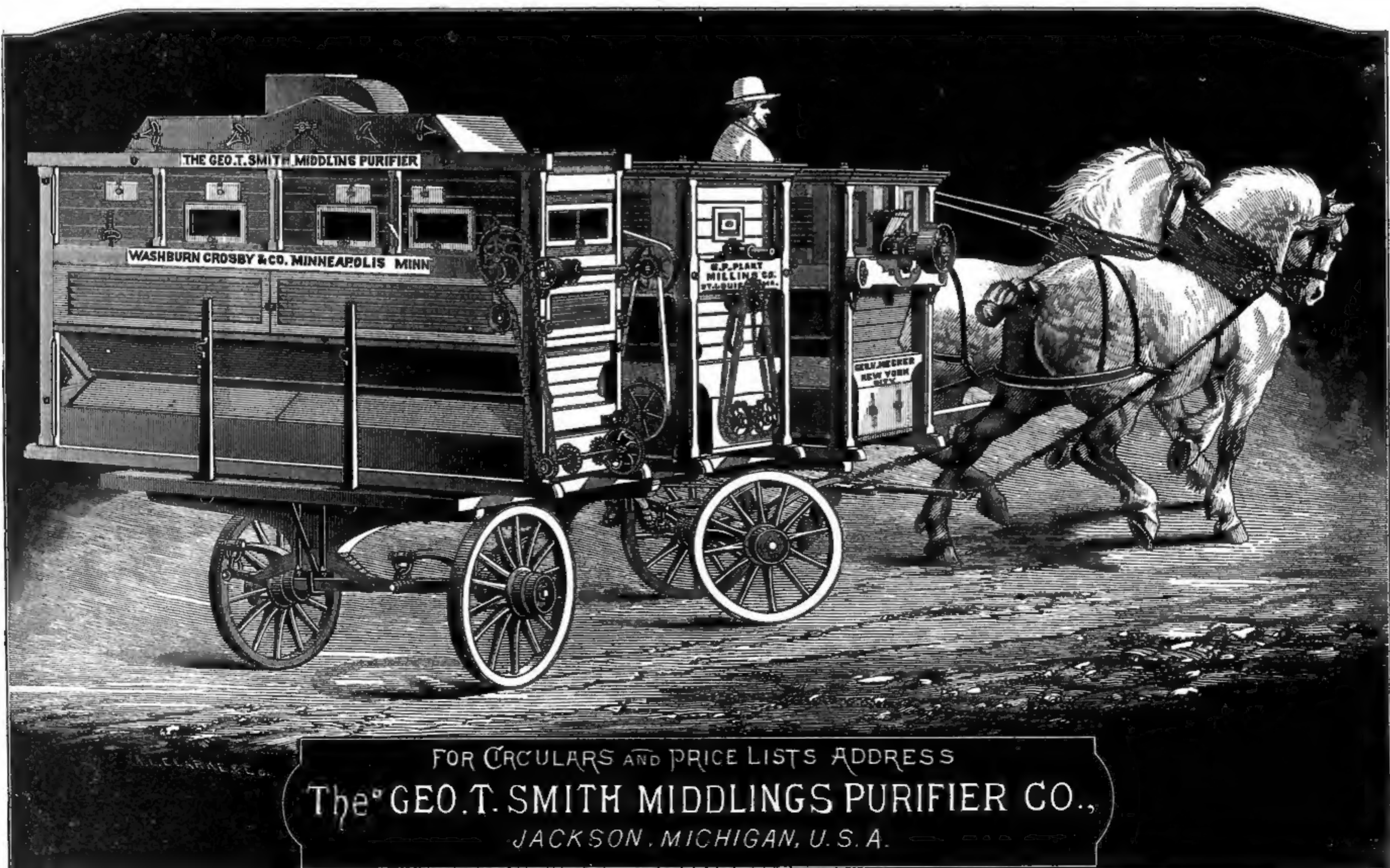
CALIFORNIA!

DEAL'S CALIFORNIA MAGNETIC
**BRUSH SMUTTER
AND
SEPARATOR COMBINED**

Warranted The Very Best In America.

The purchaser being the judge after 60 or 90 days' trial. We manufacture a complete line of Grain Cleaning Machinery, and guarantee every machine to give entire satisfaction or no pay. Send for circulars, it will pay you.

M. DEAL & CO.,
Sole Owners and Manufacturers,
BUCYRUS, OHIO, U. S. A.





SHAFTS AND BELTS.

IN many cases the shafting is too light for the weight put upon it and the strain to which it is subjected, says the Scientific American. In many cases the bearings are too far apart to properly sustain the load when in motion. In many cases the directions of the belts are either absolutely improper or relatively wrong. Recently much trouble was caused by the heating and rapid wearing out of the boxes on the receiving length of a main countershaft in an establishment which occupied a four story building. The length of shaft, which was only two inches diameter, was replaced by one of two inches and three-eighths, but the trouble still continued. Between two hangers, a little over eight feet apart, were hung pulleys, the aggregate weight of which could not have been less than six hundred pounds. The main driving belt, twelve inches wide on a six foot pulley, ran directly up and down—vertically—and every other belt pulled in one direction. The main belt that ran vertically weighed about two hundred pounds. With these data the intelligent millwright or other mechanic can readily see that economical running was impossible.

Objection is made to shafting, stiff enough to bear the load and strain, on account of its weight. This might be remedied in a great measure by substituting hollow for solid shafting. Part of this objection might be removed, also, by sufficiently supporting the shaft, as it is evident that a shaft will run with less friction when running perfectly straight and level than when running on the "double wabble" principle; at least no deflection out of a direct line should be permitted on a shaft at any place in its entire length. Even if this deflection is not apparent to the eye, it can be detected by holding the finger against a shaft in motion. The direction of belts is a subject that is not usually sufficiently considered. If a belt is hung to run vertically its entire weight is upon the upper shaft, and it must be kept so tight as to take up the sag of its weight, which causes it to fall off from the bottom of the lower pulley. If a belt must run vertically, let the power be as much larger than the upper one as possible, so that the belt can have a bearing on its sides. Under no circumstances allow the lower pulley to be smaller than the upper one; it is best always in leading from a lower to an upper shaft, or vice versa, to give the belt an angle; the best running belts are those which run horizontally.

Never have the pull of the belts all on one side of the shaft; it is unnecessary to point out the reasons why. The pull of belts should be as equally distributed relatively as possible. It is an easy matter to ascertain the proper position of the bearings of a shaft relative to its weight before the hangers are placed and the shaft hung. Place the bare shaft on boxes on movable horses, the bearings being at the desired distance apart. Then load the length of shaft with the weighed or estimated load of pulleys, and notice any deflection. The load test need not be the actual weight, but only a relative portion. Rig a lever over the shaft midway between the bearings on the horses, one end of the lever to be held by a rod bolted to the floor and the other end loaded. By estimating the difference (relative) between the fulcrum and the shaft, and the shaft and the weight at the end of the lever, a comparatively easily handled weight can represent the total weight of the shaft, on the principle of the ordinary steam boiler safety valve lever.

After testing the shaft by the actual weight of the pulleys and belts it has to carry, add fifty per cent. more for the sagging, swaying and vibration of the belts in motion, and when this total weight can be sustained without deflection, the position of your bearings is determined.

A NEW TURBINE.

At the recent exhibition in Steyr, Austria, a new water motor was exhibited which seems to be designed to utilize the current of rivers and streams without the construction of costly dams. Its inventor, Mr. Nossian, civil engineer at Steyr, calls it the "Hydro-Locomobile for electrical transmission." The question has often been asked, why the immense power of our larger rivers was not utilized by large water wheels; the answer has always been that wheels or turbines need a larger fall of water if they are to be effectual, and that the creation of an artificial fall in the larger rivers impossible for economical as well as for many other reasons, while the natural current or fall of the river was too insignificant for utilization in such a manner, as the effective power of the ship mills amount to only between 10 to 15 per cent. of the theoretical power of the water striking against the wheel.

This new motor belongs to the class of Axial turbines (systems, journal, girard, etc.) The water flows parallel to the axis of the thread wheel through the buckets, says Pappenheim's Mueller Zeitung. It has an exterior and an interior tire with conical connections and twenty-five buckets; five of these are fixed and connect the two tires, while the other twenty are moveable and can be regulated at will by a simple but ingenious contrivance. By these means the angle of ingress and egress can be changed at high water, and the desired velocity maintained. Such a motor produces a larger effect comparing to the quantity of water available, on a similar way as the screw propeller produces as compared with the clumsy paddle wheel. Tests made with this new motor have demonstrated an effective power of 50 per cent. and more, and these turbines are to be sold under a full guarantee of such performance.

* * Do we, in our application of power, says an exchange, make as much use of wind, water and waves as we ought, remembering that their power may be transmitted to a distance? Do we resort, to any large extent, to sources of power in nature other than coal? Is it not the fact that mechanical invention has gone back in these matters rather than forward? And do we utilize that primary source of power, the heat of the sun, the current heat from year to year, making the most of barren hillsides, as it seems to me we might do, by planting quick growing trees, which, fostered and matured by the sun, would yield large quantities of wood to be used as fuel for domestic purposes? Are we estimating at their full value the deposits of peat, and are we not tempted to pass by this large store of fuel because its use is attended with difficulties? Is it not true that we use coal in the most grossly wasteful manner? How much of the fuel goes up the chimneys of our furnaces unconsumed, in the form of invisible carbonic oxide?

* * The principal derangements of engines are hot bearings, loose keys, and leaky joints, an Exchange tells us. If a bearing heats continually, when properly adjusted and well lubricated, it is too small. Sometimes bearings heat on account of dirt or grit, because they are set up too tightly, or out of line. A hot bearing can often be cooled without stopping the engine, by mixing sulphur or black lead with the oil, or by turning on a stream of water from a hose. If a joint blows out, it can sometimes be wedged, so that the engine can be run until

stopping time. If keys or bolts become loose, it will generally be indicated by a thump in the engine. To prevent the freezing of pipes and connections in exposed situations, they should be either thoroughly drained, or the water should be kept circulating in them.

* * To draw a piece of tool steel to a point may appear a simple operation at first sight, but unless care is taken it cannot be done. If the end of the bar of steel is concave in the slightest degree it cannot be pointed, for in hammering it the surface steel is made to overrun the center, and causes the extreme end to be concave in a greater degree than when it was started, and so long as the concavity exists the steel cannot take a fine point. Before commencing to draw the steel to a point the extreme end of the piece of steel should be ground or filed to a rounded point, similar to a center punch, but not so sharp. When this is done, a point as fine as a needle may be drawn out. Care must be taken not to overheat the steel, or it will crumble to pieces. It should not be heated above cherry-red heat:

* * A report of the Board of Trade at Chemnitz, Saxony, ascribes the increasing importation of grain into Germany to the fact, that these grains are grown under better climatic conditions, on natural fertile soil and therefore produce a harder kernel, richer in gluten, than the home products grown by the aid of artificial manure. Such foreign grains produce a flour more profitable to the baker, and in consequence the demand for the imported grain increases, especially as the farmers of Saxony persist in growing the English wheat, which produces a large quantity, but is very poor in gluten, and therefore more unfit for baking purposes.

* * In view of the recent agitation of the grain question in the Bohemian legislature, the millers of Bohemia intend to call for a convention to discuss their side of the question and to guard their interests as much as possible.

* * A pressure of $2\frac{1}{2}$ atmospheres caused barley grains to germinate 24 hours earlier than those placed under ordinary atmosphere pressure, according to a statement by Mr. Carter, printed in "nature."

The Wellington Belt Holder.



A NEW IDEA!

BETTER AND CHEAPER THAN LOOSE PULLEYS.

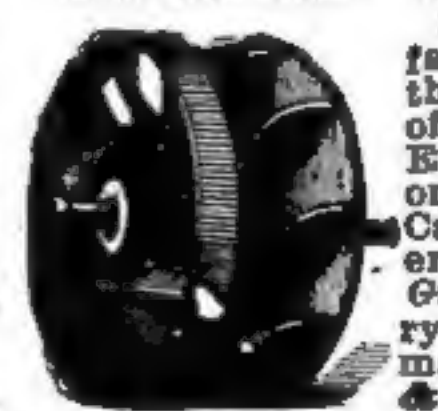
BETTER AND FAR CHEAPER THAN DEAD PULLEYS.

Our Customers Like It and Order More.

Please write for Circular to

W. R. SANTLEY & CO., WELLINGTON, O.

DeLOACH WATER WHEELS.



Simplest and Cheapest Manufactured, and have received the unqualified endorsement of all who have used them. Every small Mill can afford one. Send for large Illustrated Catalogue of Wheels, and general Mill supplies. "The Star Grind" Mill stones from our quarry are unsurpassed and sell remarkably low. A. A. DeLoach & Bro., Atlanta, Ga. U. S. A.

Toledo Mill Picks and Stone Tool Mfg. Co.



Manufacturer and Dresser of

MILL PICKS.

Made of the very best double-refined English cast steel. All work guaranteed. For terms and warranty, address GEO. W. HEARTLEY, No. 297 St. Clair Street, Toledo, O. Send for Circular.

N. B.—All Mill Picks ground and ready for use (both old and new) before leaving the shop. No time and money lost grinding rough and newly dressed Picks. All come to hand ready for use.

ALSO MANUFACTURERS OF

SHAFTING, PULLEYS, HANGERS, COUPLING AND MACHINE JOBBING.

Circuit Court of the United States.

WESTERN DIVISION OF THE SOUTHERN DISTRICT OF OHIO.

U. H. ODELL et al. vs. STOUT, MILLS & TEMPLE.

CERTIFIED COPY OF DECREE.

The United States of America, Western Division of the Southern District of Ohio, ss.

At a stated term of the Circuit Court of the Western Division of the Southern District of Ohio, in the Sixth Judicial Circuit of the United States of America, begun and had in the Court rooms at the City of Cincinnati, Ohio, in said District on the first Tuesday of October, being the seventh day of that month, in the year of our Lord one thousand eight hundred and eighty-four, and of the Independence of the United States of America, the one hundred and ninth.

Present—The Hon. George R. Sage, District Judge, holding the Circuit Court.

On Tuesday, the twenty-first day of October, 1884, among the proceedings had were the following, to-wit:

Udolpho H. Odell and The Stilwell & Bierce Mfg. Co. ss. vs. Atlas L. Stout, Sarah A. Temple, William M. Mills & John C. Temple. Equity.

This suit having been brought to a final hearing upon pleadings and proofs, and counsel for the parties respectively having been heard thereon, and the same having been duly considered by the Court, it is found and hereby ordered, adjudged and decreed that the reissued Letters Patent of the United States, No. 10139, granted U. H. Odell June 20th, 1882, for a new and useful improvement in roller mills, issued upon the surrender by him of his original patent therefor, dated December 18th, 1881, No. 280,954, as set forth in the bill of complaint, are good and valid. That the said U. H. Odell was the original and first inventor of the improvement secured in the second, third, fourth, fifth and sixth claims thereof; and that the defendants, Atlas L. Stout, Sarah A. Temple, William M. Mills and John C. Temple, have disturbed, violated and infringed the exclusive rights of complainant under the second and fourth claims of said reissued patent, as in said bill set forth, by the manufacture and sale of a roller mill containing the inventions secured by said patent. And it is further ordered, adjudged and decreed that the complainant do recover of the said defendants the profits, gains and advantages which said defendants have received, or which have arisen or accrued to them from said infringement of said reissued patent, together with the damages the complainant has sustained thereby.

And it is hereby further ordered, adjudged and decreed that it be referred to Quincy Corwin, who is hereby appointed a special Master of this Court, to ascertain and take and state and return to the Court, an account of the gains, advantages and profits which said defendants have received, or which have arisen or accrued to them from infringing the second and fourth claims of said patent.

And it is further ordered, adjudged and decreed that the complainant on such accounting have the right to cause an examination of the defendants, or either of them "ex parte" or otherwise, and also the production of their books, vouchers and documents, and that said defendants respectively attend for such purpose before said Master, from time to time, all as said Master shall direct.

And it is hereby ordered, adjudged and decreed that a perpetual injunction be issued in this cause against Atlas L. Stout, Sarah A. Temple, William M. Mills and John C. Temple, pursuant to and in accordance with the bill of complainant herein filed.

The United States of America, Western Division of the Southern District of Ohio, ss.

I, William C. Howard, Clerk of the Circuit Court of the United States, within and for the Division and District aforesaid, do hereby certify that the foregoing decree is truly taken and correctly copied from the journal of said Court.

In Testimony whereof, I have hereunto set my hand and affixed the seal of said Court at the City of Cincinnati, this 21st day of October, A. D., 1884.

WILLIAM C. HOWARD, Clerk.
Per C. R. Nevin, Deputy.

IMPORTANT NOTICE.

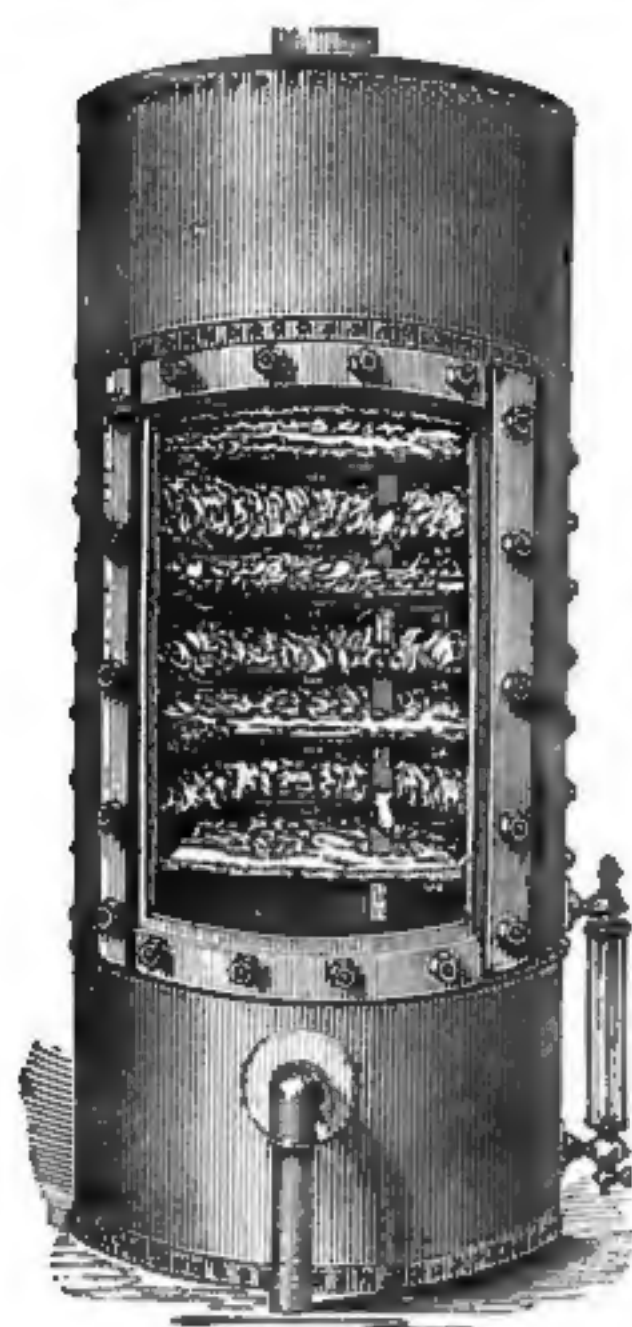
The fact is, millers appreciate the valuable adjustments for Roller Mills invented and patented by U. H. Odell, of which we are the sole manufacturers, and they are disposed to insist upon having them. This is especially true of the devices for simultaneously spreading the rolls and shutting off the feed with one movement of a hand-lever; and the devices for retaining the adjustments of the tension springs as fixed by the miller in charge, without their being affected by subsequent changes in the set of the rolls; also of the tightener devices for regulating the driving belts.

These are practical and valuable improvements and substantial evidence of their great merit and of their appreciation by millers, is found in the fact that rival manufacturers have unlawfully appropriated them, in order to find sale for their roller mills, and we respectfully caution millers against such infringing decrees. These improvements are secured to us by several Letters Patent, and we shall firmly insist upon our rights being respected. As a beginning in that direction we brought suit in the United States Court against Stout, Mills & Temple, of this city, for infringement of Odell's patents in the "Livingston" roller mills, manufactured by them. The case was ably and exhaustively defended and the validity of Odell's patents assailed. It was tried before Justice Stanley Matthews of the United States Supreme Court, and Judge Sage of the United States District Court for the Southern District of Ohio, both of whom concurred in sustaining the validity of Odell's patent and in pronouncing the "Livingston" roller mill an infringement, as set forth in the bill of complaint. The decree of the Court is printed herewith.

We wish to avoid litigation if possible, but we must defend our rights, and shall, at our convenience, proceed against other infringers.

STILWELL & BIERCE MFG CO.,

Sole Licensees under U. H. Odell's patents,
DAYTON, OHIO.



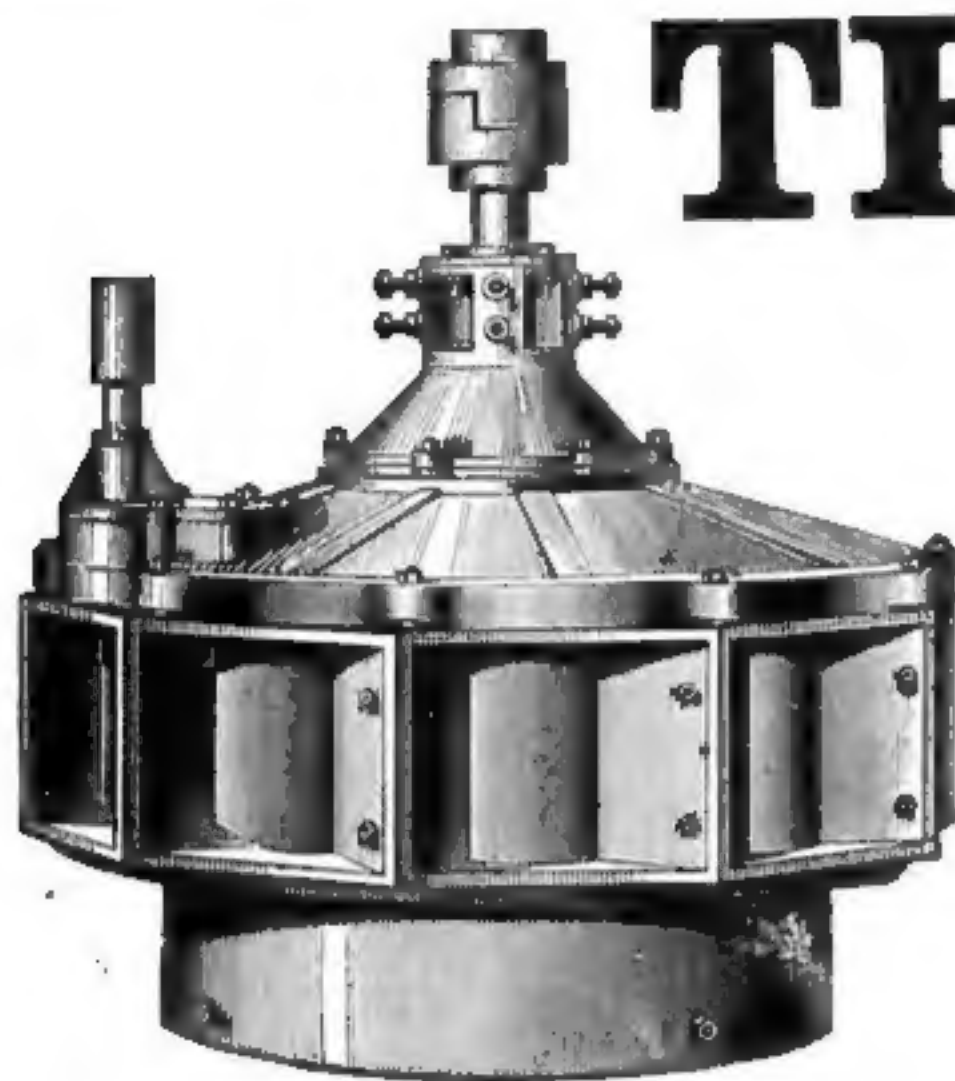
STILWELL'S PATENT LIME EXTRACTING HEATER and FILTER COMB'D

IS THE ONLY LIME EXTRACTING HEATER THAT WILL

Prevent Scale in Steam Boilers, Removing all Impurities from the Water Before it enters the Boiler.
THOROUGHLY TESTED. OVER 3,000 OF THEM IN DAILY USE.

This cut is a fac simile of the appearance of a No. 5 Heater at work on ordinary lime water, when the door was removed after the heater had been Running two weeks. Illustrated Catalogue Free.

STILWELL & BIERCE MANUF'G. CO., DAYTON, OHIO.



THE EUREKA TURBINE

Celebrated as the Best Part-Gate Wheel Ever Built.
Absolutely Unequalled in Efficiency, as Shown by
The Accompanying Table.

WE PUBLISH OUR PART-GATE FIGURES.

OTHERS SIGNIFICANTLY OMIT THEM.

No Other Turbine Ever Approached the Above Percentages at Part-Gate.
For Catalogue and Information Address,

W. H. BARBER & CO., ENGINEERS AND MACHINISTS, ALLENTOWN, PA., U. S. A.

From the Records of Actual Tests at the Holyoke, Mass., Test-
ing Flume:

PERCENTAGE OF EFFICIENCY.

	Full Gate.	$\frac{3}{4}$ Water.	$\frac{1}{2}$ Water.	$\frac{1}{4}$ Water.
24 Inch Wheel.....	.8438	.8416	.8202	.8002
24 Inch Wheel.....	.8806	.7910	.7700	.7008
24 Inch Wheel.....	.8078	.7878	.7275	.6796
30 Inch Wheel.....	.8000	.8011	.7814	.6850

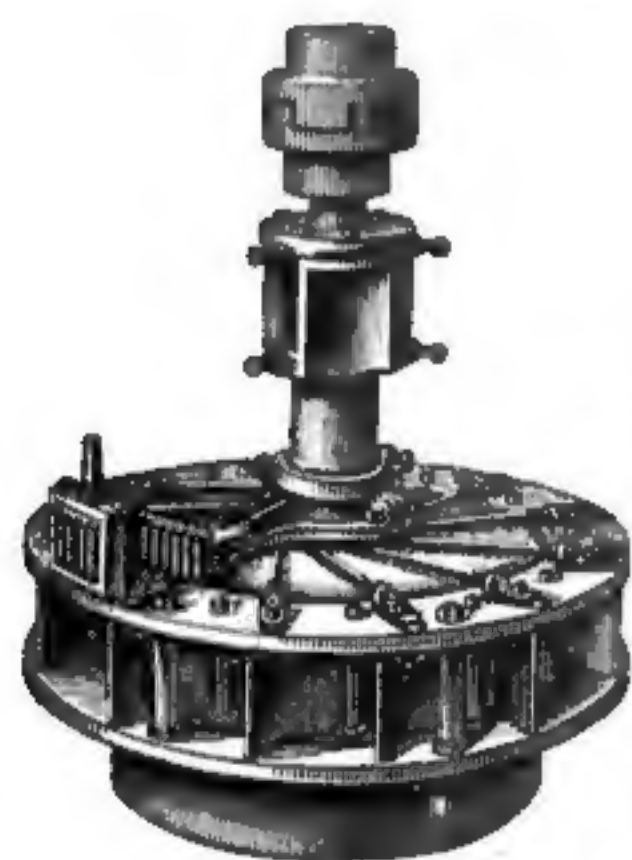
LEFFEL'S WATER WHEEL

MADE BY JAMES LEFFEL & CO.

The "OLD RELIABLE"

with improvements, making it the

**MOST PERFECT TURBINE
NOW IN U.S.**



Comprising the Largest and the Smallest Wheels, under both the Highest and
Lowest Heads used in this Country. Our new Illustrated Book sent free to
those owning water power.

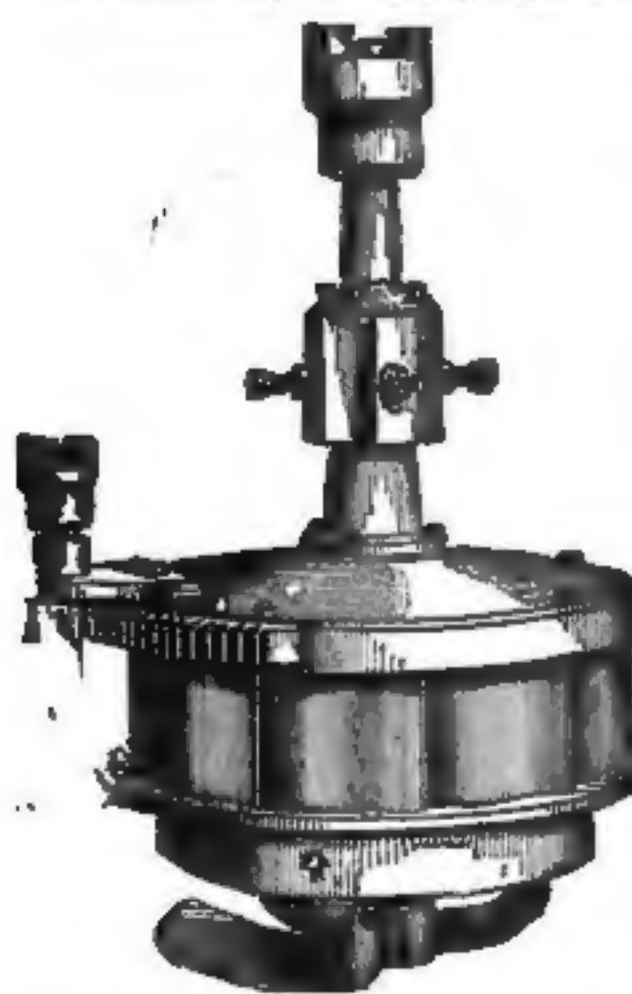
Those improving water power should not fail to write us for New Prices
before buying elsewhere. New Shops and New Machinery are provided for
making this wheel. Address

**JAMES LEFFEL & CO., SPRINGFIELD, OHIO, AND
110 LIBERTY STREET, N. Y. CITY.**

PORTABLE FORGES

Empire Portable Forge Co.
Cohoes, N. Y.
Send for Catalogue.

LESNER'S IMPROVED TURBINE.



Simple,
Durable,
Strong.
Gate Works
EASILY
—AND—
RAPIDLY.
PERFECT
Satisfaction
—IS—
GUARANTEED.

W. B. WEMPLE'S SONS, FULTONVILLE, N. Y.

Improved Success Percentage.

Full Gate.....	86.29
$\frac{3}{4}$ Gate.....	86.07
$\frac{1}{2}$ Gate.....	81.90

*This Wheel is Durable
and Cheap.*

Send for Pamphlet to
**S. MORGAN SMITH,
YORK, PA.**



*This Wheel gives high results, and
is acknowledged the best, most prac-
tical and efficient Turbine made.
For Simplicity, Durability, and
Tightness of Gate it has no equal.*

State requirements and send for Catalogue to
**T. C. ALCOTT & SON,
MOUNT HOLLY, N. J.**

**RIVAL
STEAM PUMPS**
THE
CHEAPEST
AND THE
BEST
FOR
HOT & COLD
WATER.
\$35.00
AND
UPWARDS.
SEND FOR
CATALOGUE

15 SIZES
MANUFACTURED BY
JOHN H. MCGOWAN & CO.
CINCINNATI

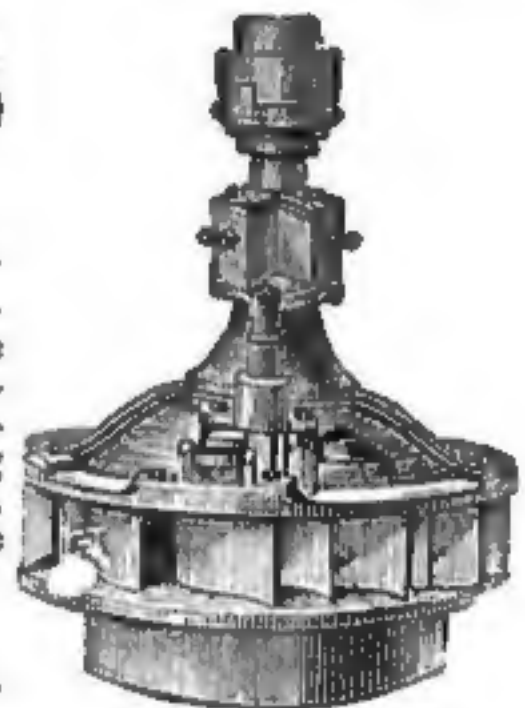
**Automatic Cut-off
ENGINES**
Embodying a New System
of Regulation.
THE GOVERNOR
WEIGHS THE LOAD.
The most perfect
governing ever
obtained. Send
for circular D.
**BALL ENGINE CO.
ERIE, PA.**
WE GUARANTEE better regulation than
it is possible for any other ENGINE to give.

MERCER'S

RELIABLE

Turbine Water Wheel.

This wheel is acknowl-
edged one of the best on the
market. Has valuable im-
provements in the construc-
tion which is commanding
the attention of buyers.
Send for catalogue and price
list. **T. B. MERCER,**
WEST CHESTER,
CHESTER CO., PA.



BURNHAM'S

IMPROVED

Standard Turbine

IS THE

Best constructed and finished,
gives better Percentage, more
Power, and is sold for less
money, per horse power, than
any other Turbine in the world.
New Pamphlet sent free by



Burnham Bros., York, Pa.

POOLE & HUNT'S LEFFEL TURBINE WATER WHEELS

Made of Best Materials, and in the Best Style of Workmanship.

MACHINE-MOLDED MILL GEARING

From 1 to 20 feet diameter, of any desired face or pitch, moulded by
our own Special Machinery.

SHAFTING, PULLEYS AND HANGERS

Of the Latest and Most Improved Designs.

Engines, Boilers,
Mixers and General Outfit for Fertilizer Works.

Special Attention given to Heavy Gearing. Shipping Facilities the
Best in All Directions.

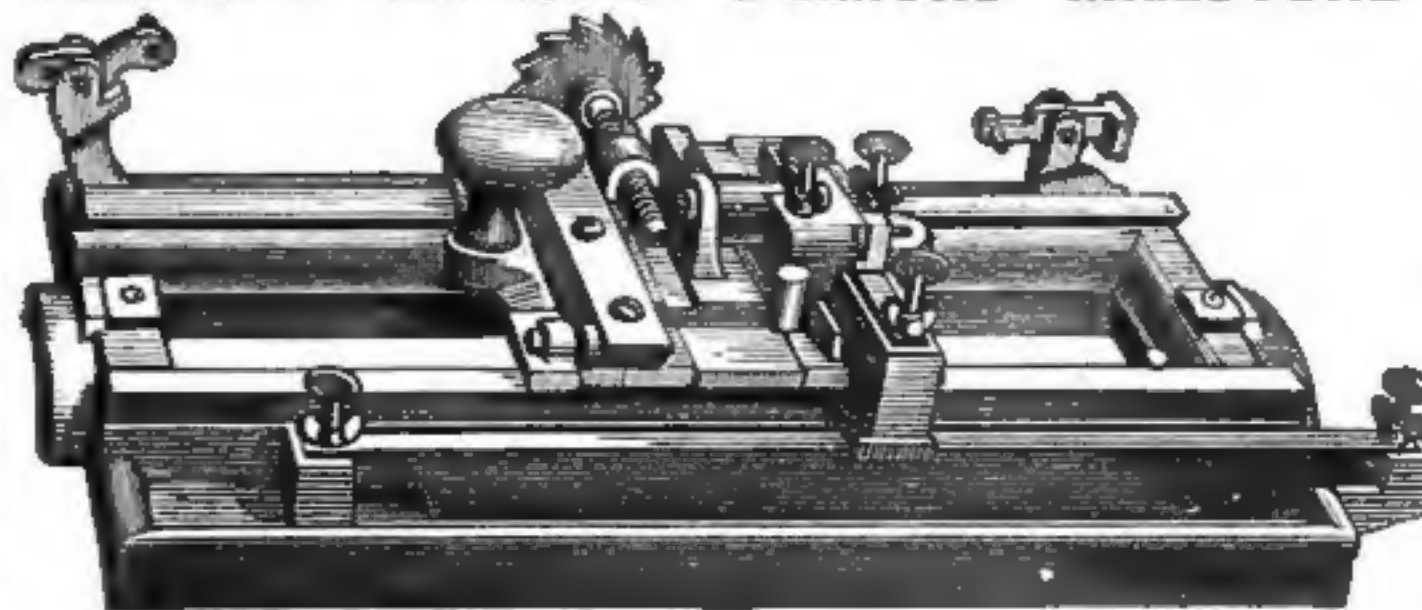
POOLE & HUNT, BALTIMORE, MD.

HOOVER'S IMPROVED DIAMOND MILLSTONE DRESSING MACHINE.

ADAPTED TO ALL KINDS OF
DRESSING.

No. 1, to face and crack	\$25.00
No. 2, to face, crack, dress furrows, and will dress any size stone.....	45.00
No. 3, to face, crack and dress furrows.....	40.00

Will do as good work, and is more
easily adjusted than any other ma-
chine. Sent on 30 days' trial. Ad-
dress for circulars, containing full
information.



C. S. HOOVER, Patentee and Manufacturer, 409 East King St., LANCASTER, PENN.



Notes from the Mills.

Leak, Wall & McRae are building a grist mill at Rockingham, N. C.

The heaviest wheat receipts ever known in Duluth was 150,000 bushels Oct. 29.

In Northern parts of Fayette and Bond Counties, Ill., the army worm has made its appearance in great numbers.

Mr. J. Markley, of Minneapolis, Minn., has purchased a double roller mill from Messrs. E. P. Allis & Co., Milwaukee.

The hundred thousand bushels of this year's Manitoba wheat have reached Montreal, via the Canadian Pacific Railroad.

One double roller mill from Messrs. E. P. Allis & Co., Milwaukee, has been added to the Cedar Falls Mill Co., Cedar Falls, Ia.

The mill of Messrs. Shick & Wamshor, Pt. Clinton, Pa., received recently one of Messrs. E. P. Allis & Co.'s double roller mills.

An addition of four of Messrs. E. P. Allis & Co.'s double roller mills has been made to the mill of Mr. J. A. Limscott, Fair Haven, Minn.

Messrs. C. A. Gambrell & Co., of Baltimore, Md., have added to their mill one of the double roller machines of E. P. Allis & Co., Milwaukee.

The Central Planing and Flouring Mill, at Cincinnati, O., Theodore Sanning, proprietor, assigned on Oct. 29. Assets, \$8,000; liabilities, \$25,000.

Messrs. McClinton & Tyson Bros. Rossville, Kan., have improved their mill by the purchase of a double roller mill from Messrs. E. P. Allis & Co., of Milwaukee.

The first car of No. 2 shelled corn of the 1884 crop was received in Cincinnati, O., Oct. 28, by the commission firm of Root & Co., and at 45 cents per bushel.

The Minneapolis mills made 4,797,340 barrels of flour last year—an increase of 796,377 barrels. Total receipts of wheat during the crop year was 24,000,000 bushels.

Three double roller mills together with other minor machinery have been placed into the mill of Messrs. Sitz & Kirchner of Peterson, Ia., by Messrs. E. P. Allis & Co., Milwaukee.

The machinery of the mill of Messrs. R. M. Todd & Co., of Albert Lea, Minn., has been improved by the addition of a double roller machine from E. P. Allis & Co., Milwaukee.

A dispatch from Waupaca, Wis., dated Oct. 31, states that a fire destroyed the feed mill of John A. Ogden. Loss, \$1,000; insured for \$500 in the Northwestern National of Milwaukee.

Messrs. A. Pardee & Co., of Mauch Chunk, Pa., have added a double porcelain roller mill to the outfit of their establishment; it was furnished by Messrs. E. P. Allis & Co., Milwaukee.

Two double roller mills and some other special machinery have recently been sold by Messrs. E. P. Allis & Co., of Milwaukee, to Messrs. Lyman & Co., whose mill is located at St. Joseph, Mo.

A Mr. Twynam, of Winchester, England, records that the planting of a single grain of wheat has yielded 39 ears containing 2,800 grains. The three best ears had respectively 104, 103 and 101 grains.

Mr. R. W. Mehard, East Brook, Pa., intending to change his mill into a roller mill, has ordered from Messrs. E. P. Allis & Co., Milwaukee, five double roller mills and all the other special machinery necessary for the change.

The boiler in the Columbus flouring mills exploded the other morning the Neenah (Wis.) Gazette tells us, instantly killing the engineer and fireman, both negroes. The fireman pumped water into the boiler when it was red-hot.

The citizens of Anoka, Minn., are happy over the announcement that the Washburn flouring mill will be rebuilt in that city, to be finer and larger than the mills destroyed by the recent fire, with a capacity of 2,000 barrels per day.

John Hunsberger, of Harvey County, Kan., reports a great yield of wheat from a small quantity of seed. From one and one-half bushels of seed sowed on three acres he reaped 135 bushels, a yield of 90 bushels to each bushel of seed sown.

The outfit of the mill of Messrs. Northey Bros., of Woonsocket, D. T., has been given to Messrs. E. P. Allis & Co., Milwaukee. This firm has so far shipped a No. 2 four break reduction machine, double roller mills and the other machinery necessary to ensure a successful working of the plant.

The work of rebuilding the Washburn elevator at Anoka, Minn., is fairly under way. The brick work on the Washburn, Ticknor, Jackson, Syndicate, Norell, and the Cundy blocks is completed, and other brick blocks are rapidly going up.

Mr. Geo. W. Smith, Clearfield, Pa., has decided to fit his mill for the roller system, and has left orders with Messrs. E. P. Allis & Co., of Milwaukee, for ten pairs of Allis rolls in Gray's noiseless belt frames and other machinery necessary for a successful working of the roller plant.

After carefully considering the different roller systems, Mr. J. G. Bechtel, Burford, Ont., concluded to leave his order for the output of his mill with Messrs. E. P. Allis & Co., of Milwaukee. In consequence this firm has already shipped a complete outfit, among which are two double roller mills, a No. 2 four break machine and much other machinery.

The contract for the conversion of the mill of Mr. Thos. Williams of Pontiac, Ill., into a full roller mill was given to Messrs. E. P. Allis & Co., Milwaukee. One No. 2 four break machine, two double roller mills and other necessary machinery have recently been shipped in order to enable the mill to resume operations on the improved system as soon as possible.

The Van Dusen Elevator Co., of Minneapolis, has filed articles of incorporation with the Secretary of State. The capital stock is placed at \$150,000, and the incorporators are George W. Van Dusen, Chas. H. Chadbourne, Rochester; R. W. Chadbourne, Columbus, Wis.; Charles M. Harrington, William W. Huntingdon, A. R. Potter and George L. Boleer, Minneapolis.

A good many fields of wheat in the hills north and west of Walla Walla, Washington Territory, have not been cut. The low prices of wheat and the high prices charged for harvesting are given as the reason. At Pomeroy wheat is sold at 35c. per bushel. In Lewiston it has been sold for 28 and 30c. per bush, and dull sale at that price. Millions of bushels have been produced this year in that locality.

In the course of a recent business communication, the Cummer Engine Co., of Cleveland, Ohio, say: We are meeting with excellent success with our new Jonathan Mills' reel, and are so arranged now that we can turn out three every two days. Wherever we have placed them, they are giving the very best of satisfaction, and we are getting duplicate orders from persons who have tried them, which, we think, is an indication of their superiority.

We are advised by Mr. C. N. Smith, of Dayton, Ohio, that the suit in interference between himself and Mr. W. D. Gray, of Milwaukee, has been decided in his favor, the time allowed for appeal having expired, and that in due course, patent will issue to him. He intimates his intention of protecting his rights against infringement, by suit at law if necessary, and desires millers, in order to avoid future trouble, to bear this in mind when purchasing machines.

Comparative statements of the exports of wheat and flour from Atlantic seaboard ports for eight weeks, from August 25 to October 18, show the following:

	Wheat, bu.	Flour, bu.
1884.....	12,118,335	1,307,216
1883.....	3,968,444	1,237,003
1882.....	22,874,283	1,423,922
1881.....	13,462,090	884,544
1880.....	26,769,463	1,131,836
1879.....	38,099,231	1,171,820

The raising of flax seed has assumed important proportions in Southern Dakota this year. Two million bushels have been raised and the farmers are selling it at \$1.10 per bushel. It goes to Chicago, whence it is distributed to the oil mills in Ohio and other places. It is better than sod corn for a first crop. The farmer can raise it on breaking the first year. The yield per acre is about the same as wheat. Its cultivation involves no more labor than that of wheat; yet, while the farmer can get only 50 cents per bushel for his wheat, he gets \$1.00 per bushel for flax seed.

A letter of the 23d inst. from Wabash, Ind., says: This morning the machinery in the Wabash flouring mills came to a sudden stop, and upon investigation it was found that seven large eels, each nearly four feet long and weighing seven pounds, had entered the turbine wheel, which supplies the motive power for the mill, and choked it up. This afternoon the mill again stripped abruptly, and the turbine was a second time found full of eels. This time nine, weighing in the aggregate sixty pounds, were removed from the wheel. The eels enter the old Wabash canal from the Wabash river at Lagro.

The St. Louis Globe-Democrat says: E. P. Allis & Co., the great Milwaukee machinists and founders, have established a branch office in this city at Ninth and Spruce streets, which shows that the firm recognize the importance of St. Louis as a distributing center. One of the finest and most

complete machinery exhibits was recently made here by E. P. Allis & Co. The wonderful Reynolds-Corliss engine manufactured by them attracted much attention, as did the outfits for flour mills and mill machinery. The office is in charge of Mr. Chas. A. Haynes and Mr. John B. Abbe, members of the American Society of Mechanical Engineers, who will at all times put themselves at the disposal of those who pay them a visit. Mr. J. E. Loomis, well known in this city as a practical miller, who has erected hundreds of mills, has control of the machinery for the reduction of wheat and other cereals.

At Duluth, Minn., November 1, a frightful accident occurred at new elevator D, by which two men lost their lives. Sam M. Turner and Angus M. Johnson, tanners employed in working for the Thompson Manufacturing Company of Cleveland, sub-contractors in putting sheeting on elevators, were on a scaffold sixty feet above ground. They had been engaged on the work for weeks, and became careless in the manner in which they hung the scaffold, and in rigging the scaffold did not take proper precautions in fastening lines to the staging, or dogs, when they began to work. The fastenings in consequence gave way about noon, precipitating the men to the dock below. The men struck on the timbers. Their injuries were frightful. The bones in all parts of their bodies were broken. The men were taken to the hospital and died within a short time. Johnson was a resident of Crookston and unmarried, but was to be married next month. Turner leaves a wife and child.

The Canadian Pacific has a car famine. It is estimated that there are in the country now between 4,000,000 and 5,000,000 bushels of grain. A single car will only hold 500 bushels, and no more than 20 cars can be made up in a train. In other words, on a whole train only 100,000 bushels can be shipped. The company is turning out new box cars to meet this emergency as far as possible, and in a few days nearly 200 extra box cars will be ready for use. But it makes little difference how many are turned out. The fact remains if all the grain was now thrown on the company's hands for shipment it could not be done. If navigation kept open for a month, and it is not likely to, during that time 400 trains would be required for the carrying of the grain. It would be an impossibility to run that number. This has resulted in depressing the prices of wheat temporarily, though there will undoubtedly be a rise as soon as cold weather sets in, and the grain commences to go east via the Manitoba road.

After a long period of watching and waiting, during which they had about come to the conclusion that the milling business in St. Louis was dead the syndicate which purchased the Atlantic Mills at the time the property was sold by the Sheriff have succeeded in disposing of the property to Mr. Louis Fuzz, of the firm of Fuzz & Backer. Mr. Fuzz was one of the original bondholders, and also one of the syndicate who purchased the mill. Among the bidders for the property were J. B. M. Kehlor, Jno. W. Kauffman and George Bain. Mr. Eisenmeier, of Trenton, came very near purchasing the property at one time for \$100,000, but backed out of the bargain, and it is understood that this is about the price paid for it by Mr. Fuzz. Mr. Kehlor bid \$90,000, but his offer was refused. Mr. Fuzz, although he is interested in several country mills, has never identified himself directly with the milling business of St. Louis before. The firm of which he is a member are large dealers in flour, and Mr. Fuzz's acquaintance with the trade is an extensive one. He would not even state at what time he expects to start the mills. The mill originally cost \$250,000.

Reports from Chicago state that the members of the Grain Receivers' Association are anxious to have a change in the grading of corn, oats, rye and the low grades of wheat, and a meeting was called to hear the reports of committees recently appointed to prepare a suitable system of grading to be presented to the Railroad and Warehouse Commissioners with the request that they be adopted. The principal grade objected to was rejected, which conveys an indefinite idea as to the quality, and creates the belief among those not fully conversant with the trade that it is very poor, when in reality the rejected corn and oats are frequently almost as good as No. 2, and are shipped East and graded "No. 2" without any trouble. C. E. Culver, the Chairman of the committee, reported that after a conference with the officials of the inspection department and a careful consideration of the entire question, they advise that no change be made in what is known as the contract grades of grain. They advised to strike out the word "rejected" in the rules of inspection as applied to wheat, and substitute the words "No. 4;" also to strike out the word "rejected" in the rules as to the inspection of rye and oats, and substitute the words "No. 3;" to establish new grades, to be called No. 2 and No. 3 yellow of

corn, to take the places respectively of the grades "new mixed" and "new high mixed;" to establish a grade No. 3, to include corn now classified as new mixed, and the better class of that which at present is inspected rejected, and to establish a grade to be called No. 4 corn, which shall include corn of the lower qualities that are at present classified as rejected. As to oats, the report recommends the establishment of two new grades to be called No. 1 and No. 3 white oats. The committee appointed to confer with the elevator men to try and get a reduction in storage rates reported that they had not completed their work, and were given further time. J. M. Wanzer, Chairman of the Committee on Weighing, offered the following, which was adopted. Whereas, The system of weighing sample grain in hopper scales, now in use on the Lake Shore and Michigan Southern Railroad, has proved a success, and has met a long-felt requirement of the trade in providing a reliable weighmaster; be it Resolved, That this association take such steps as may be necessary to bring said methods into general use in this city.

The monthly report of the commissioner of agriculture just out, contains some interesting facts concerning the crops and grain market of Europe. It seems that stagnation and depression in prices are agitating the farmers of Europe as well as of this country. There is little, if any, profit to the farmers, and it is believed that the inevitable result will be a reduction in the acreage of wheat next season. The crops have been unusually large, and the abundance there, as well as elsewhere, has furnished a supply almost unprecedented, and vastly in excess of the demand. The disheartening price which all grain is now bringing is even a severer blow to the farmer than the bad crops of previous years, and coming when their resources are pressed to the utmost, the future is looked forward to with dismay. The papers are teeming with farm statistics, showing the cost of raising grain per acre, and the resulting money returns in the markets. Average English wheat brings \$2.03 per bushel, which is less than it can be raised for in that country. A year ago, when the average was 20 per cent. higher, it was said there was no money to be made with average crops at that price, and now, as the reductions in rent have not kept pace with the falling of markets, the amount of loss per acre is the only question. A writer from Great Britain estimates the wheat yield of that country for the present year at over 74,000,000 bushels. He estimates the requirements of the 36,000,000 of people to be fed at over 200,000,000 bushels, of which 74,000,000 are supplied at home, leaving 126,000,000 bushels to be imported from foreign countries. About this amount was imported last year. The writer continues: "The stock of foreign wheat in the warehouses on Sept. 1, 1883, was known to be enormous, and this stock has probably been reduced. The total price of wheat during the past year has also caused a large proportion of home grown wheat to be consumed by stock, and the still lower prices which are likely to prevail during the coming year, will tend to increase the consumption. The imports of foreign wheat during each year, do not, therefore, at the present time supply so reliable a measure of the annual requirements, as was the case formerly, when the stock of foreign wheat had not assumed such gigantic proportions." This condition of the grain market in Europe, which draws so heavily from our supply, it is believed, will result in a large reduction in the acreage in this country next year. With an increased foreign demand and a smaller supply, the price of cereals would be raised, a movement of the crops would become more active and a better condition of things generally is predicted for next year.

TO THE TRADE.

Messrs. Emery & Garland, of Bay City, Mich., and Minneapolis, Minn., who have heretofore held the exclusive agency from us for the sale of our Link-Belting for use in Saw Mills and on wood-working machinery, having retired from business, the franchise held by them has been transferred to our General Agents, the Link-Belt Machinery Company of this city.

Respectfully,
THE EMERY MFG. CO.
Chicago, Ill.

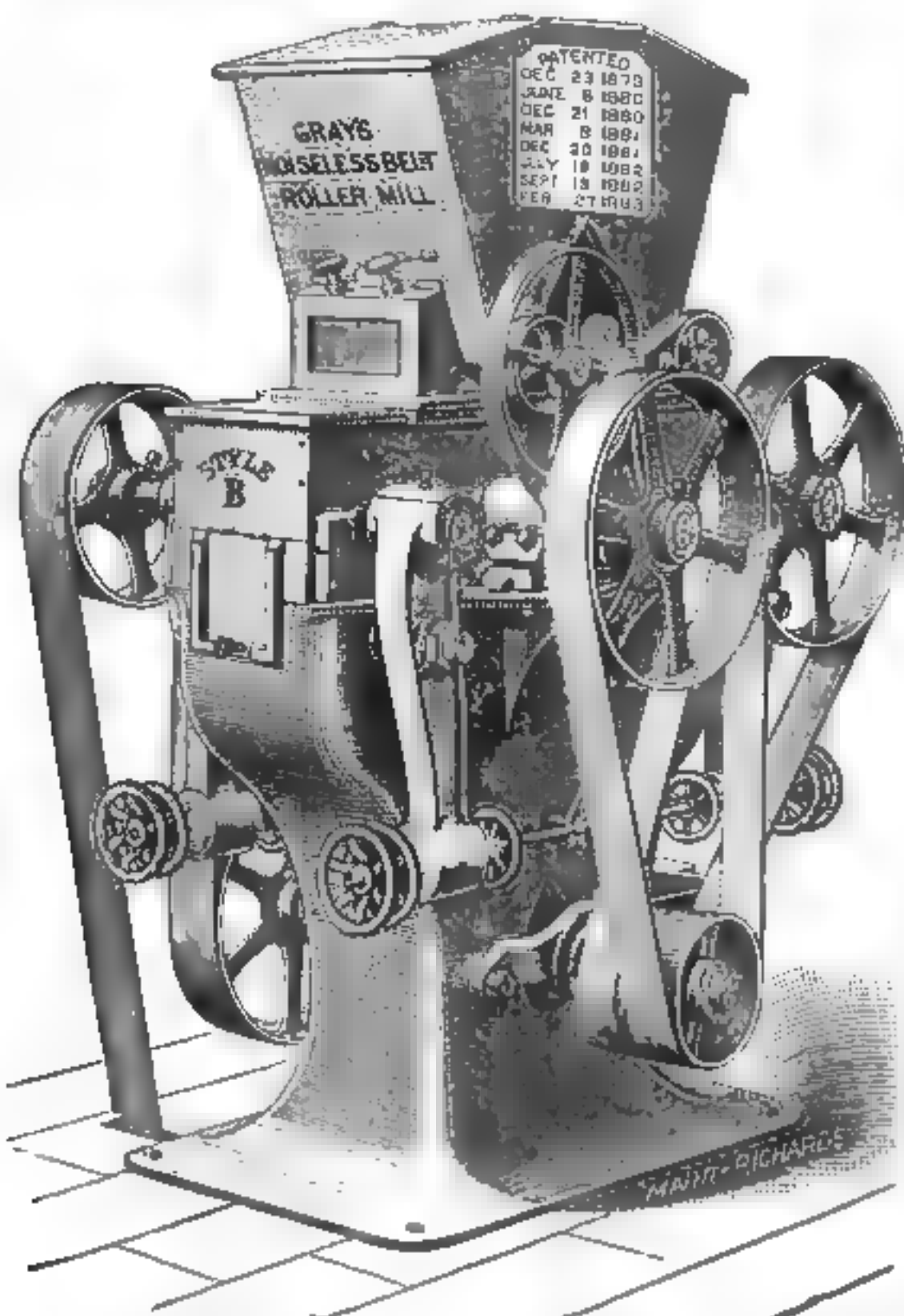
Oct. 21, 1884.

ANNOUNCEMENT.

Having purchased the business of Messrs. Emery & Garland, of Bay City, Mich., and Minneapolis, Minn., we will continue the Minneapolis House, adding to the stock of Saw Mill Machinery now there a complete line of our Flour Mill and Grain Elevator specialties, also a carefully selected stock of Mill Supplies and Tools. The business of the Bay City House of Messrs. Emery & Garland will be transferred to Chicago, where we will continue the manufacture of the celebrated Emery & Garland Lumber Trimmers and Slab Sashers. Having ample facilities, all orders will be promptly and satisfactorily filled.

Very sincerely yours,
LINK-BELT MACHINERY CO.

Oct. 21, 1884.



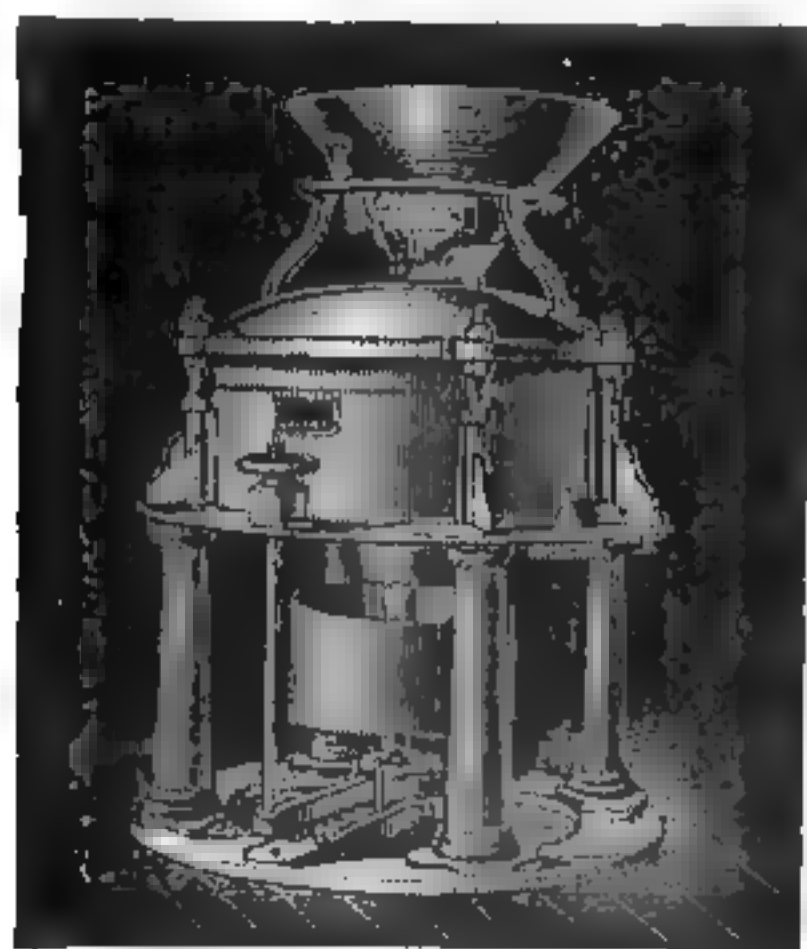
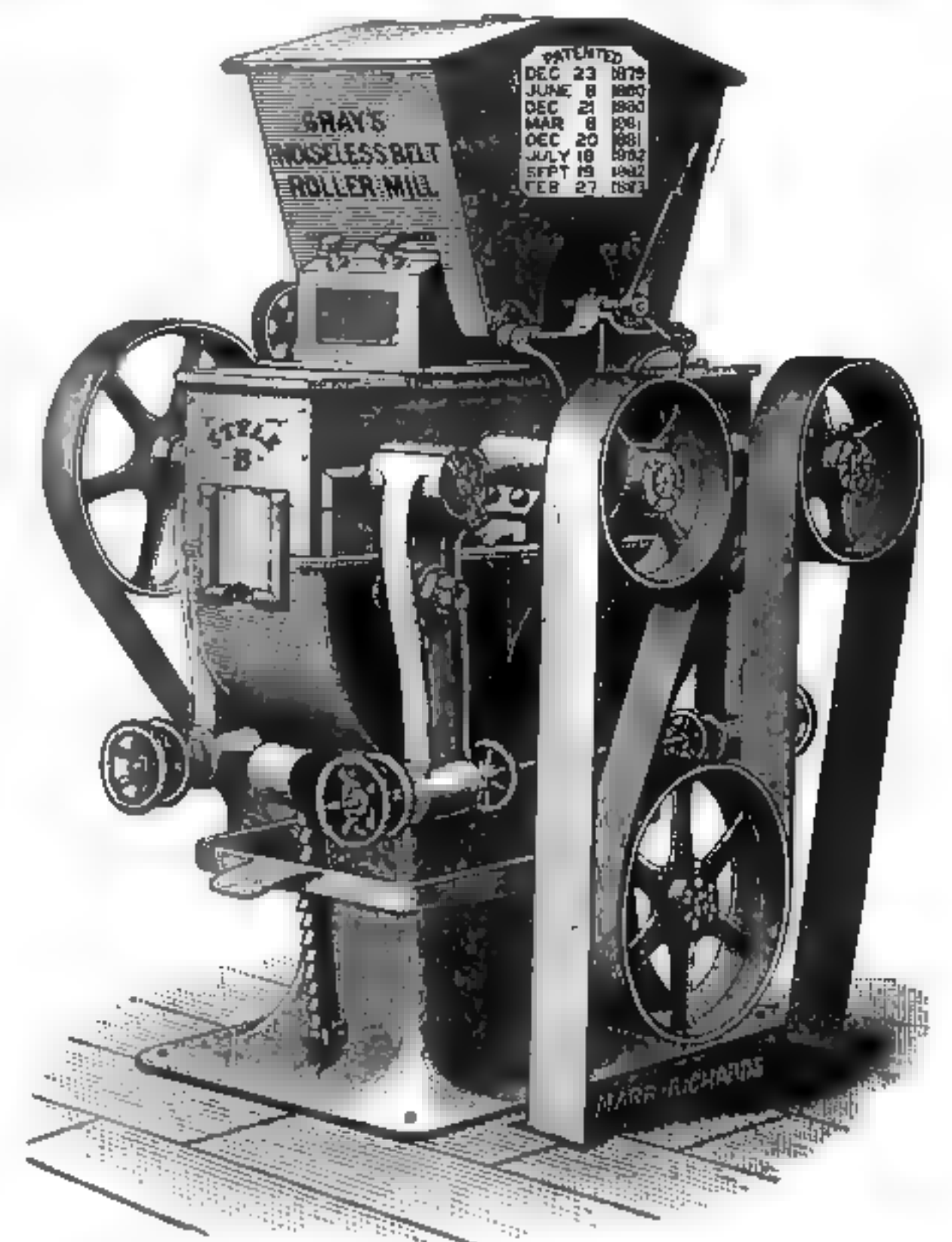
GRAY'S NOISELESS BELT ROLLER MILLS. STYLE "B" for SMALL MILLS

Send for Circulars and Prices.

E. P. ALLIS & CO.

SOLE MANUFACTURERS,

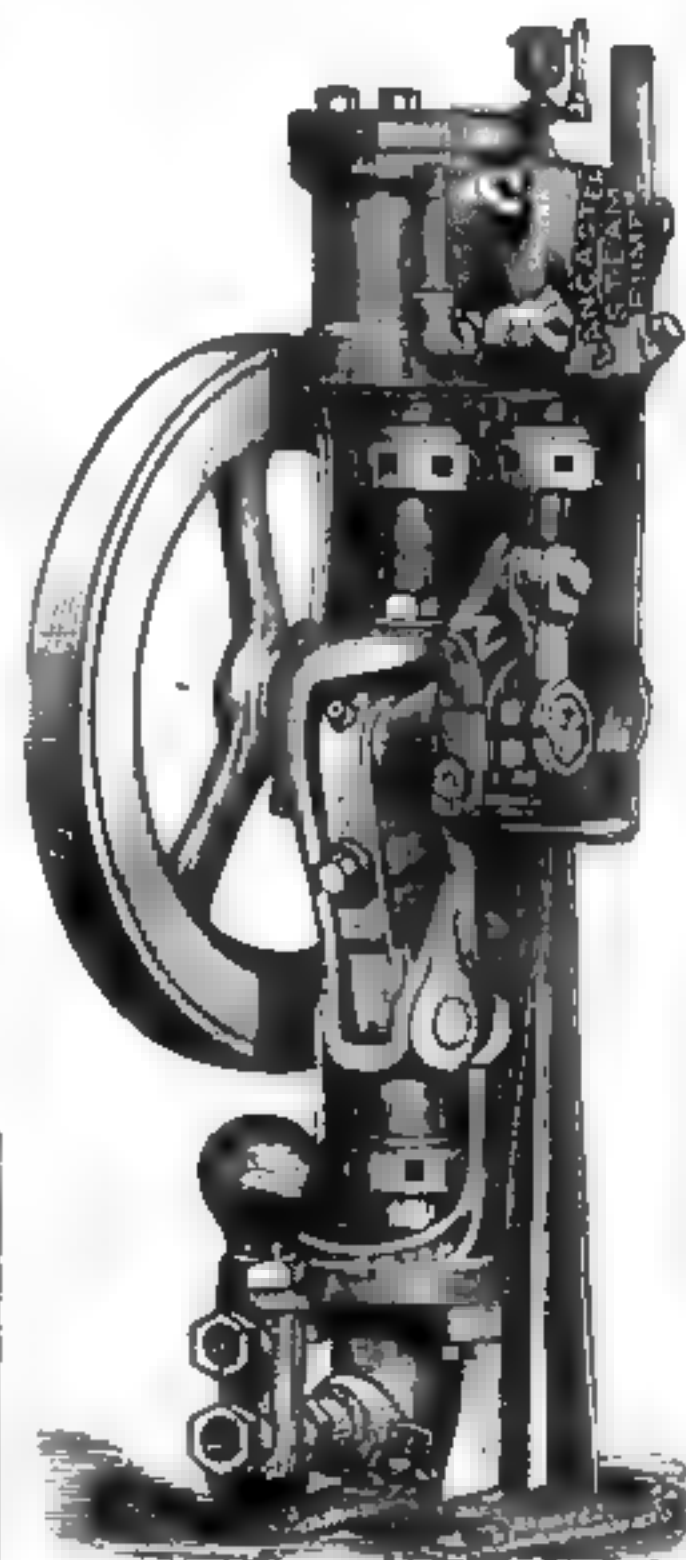
RELIANCE WORKS,
MILWAUKEE, . . WIS.



MUNSON BROS. FOR ENGINES & BOILERS

MANUFACTURERS OF
Munson's Celebrated Portable Mills,
FOR WHEAT, MIDDINGS, CORN, FEED, Etc.
Millstones, Hangings, Bolting Chests, Shafting,
Gearing, Pulleys, Hangers, Etc.

DEALERS IN EVERY KIND OF
MILLING MACHINERY,
ENGINES AND BOILERS, WATER WHEELS, Etc.
Genuine Dufour Bolting Cloth.
Specifications, Estimates and Plans furnished.
MUNSON BROS.
Address, P. O. BOX 360. UTICA, N. Y.



One to 30 Horse Power,
PRICE, FROM \$125 UPWARDS.

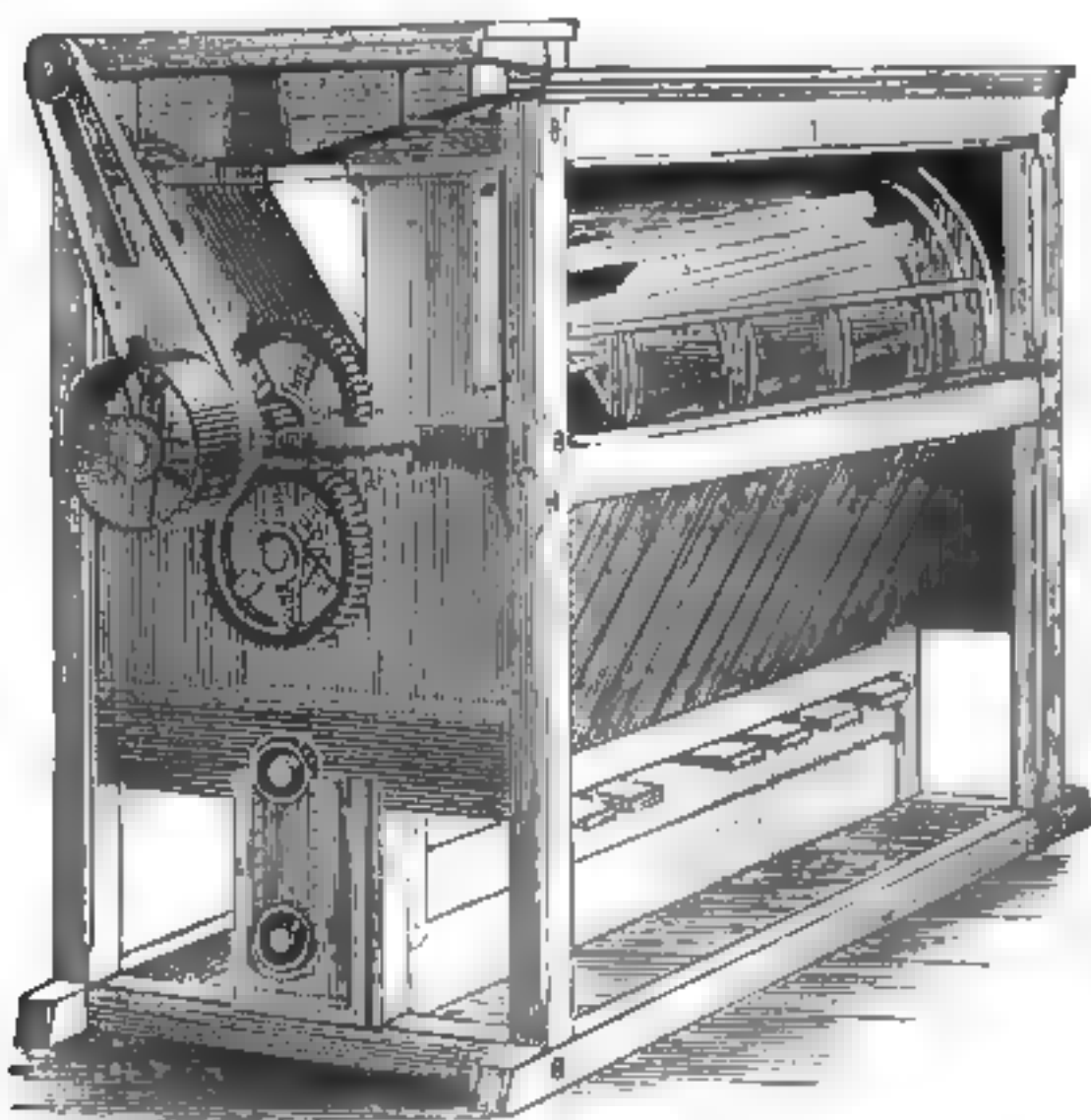
Steam Pumps, - \$35 and up.
Eclipse Tire Benders, 15 " "
Fan Blowers, - - 18 " "
Tuyere Irons, - - - \$2.50.

THE BEST IN THE MARKET!

For Circulars, Etc., Address,

THE LANCASTER STEAM PUMP CO.
AND MACHINE WORKS,
EZRA F. LANDIS, PROPRIETOR, LANCASTER, PENN.

C. N. SMITH'S CENTRIFUGAL REEL



IS BEYOND QUESTION THE
BEST IN THE MARKET
AND IS SOLD FOR
THE LEAST MONEY
While the operation of every
Machine is
FULLY GUARANTEED.

Send for Prices, Lists of
Testimonials, and De-
scriptive Catalogue.

READ THIS LETTER. THEY WILL DO AS WELL FOR YOU.

Mr. C. N. SMITH.
We have been running the two Centrifugals since February, the first without any stop whatever, and are well
pleased with them. We throw less stock on our Rolls, and make four to five per cent. less Low Grade than
before we had the Machine. You can refer any one to us and we will be pleased to give it a good send off.
Wishing you success, we remain,
Yours respectfully,
CHAS. S. DURST, Supt.

OFFICE OF LUDLOW MILLS, DAYTON, OHIO, - vii 23, 1884.

MANUFACTURED ONLY BY

C. N. SMITH, DAYTON, OHIO

MANUFACTURER OF MILL FURNISHINGS.

THE BEST AND CHEAPEST COB CRUSHER IN THE WORLD.

Steel Being Used in its Construction.

PRICE, 30.00.

RIGHT-HAND MILL.

CAPACITY 75 BUSH. PER HOUR.

Thousands of these Crush-
ers are now in use, and
giving entire sat-
isfaction.

Please Send for Circulars.

R. C. McCULLEY, LANCASTER, PENN.



ODELL ROLLER MILLS

ARE MADE ONLY BY
STILWELL & BIERCE MFG. CO., DAYTON, O.



NOTES.

The "Bock" mill at Friedrichsruhe, Mecklg. burned Oct. 5.

M. L. Schroeder of Uetersen, Holstein, lost his mill by fire on Oct. 8.

The so-called Ems mill at Sulza, Middle Germany, burned on Oct. 1.

The Miskolger steam mill at Budapest burned on Oct. 14. Loss estimated at about \$200,000.

The milling establishment at Roetha, Germany, was destroyed by fire on Oct. 1. Cause unknown.

From India the shipments have remained quite moderate, being doubtless kept in check by the low prices ruling.

The diet, of Lower Austria, has approved of a scheme for a canal intended to join the Danube, Elbe and Oder rivers.

The extensive mill buildings of Messrs. Telemann & Schmidt at Altenburg, Germany, were burned on Oct. 3. Cause unknown.

The Miller tell us that agents of English firms have, it is said, bargained to pay one dollar forty cents for No. 1 hard red Fyfe wheat at Montreal. The rate of carriage over the new Canadian Pacific route, including elevator and other incidental charges, is 27½ cents, thus giving the farmer a price of over a dollar a bushel.

German steamer subsidy bill empowers the Chancellor to enter into contracts with competent contractors for the maintenance of regular mail steamship services to Eastern Asia, Australia and Africa. The bill grants subsidies not exceeding 5,400,000 marks yearly, and requires the contracts to be approved by the Bundesrath.

The large steam milling establishment of Mr. F. Neuman, in Tropan, Silesia, was burned to the ground on Sept. 12. Within half an hour the whole building was wrapped in flames and the fire department directed their efforts to the saving of the surrounding buildings, an object which was successfully accomplished and the conflagration was confined to the mill.

The failures in the United Kingdom for the week ending Oct. 11, reported to *Kemp's Mercantile Gazette*, numbered 86, as compared with 106 and 213 in the corresponding weeks respectively of 1883 and 1882. England & Wales had 59, as against 167 and 192 in the weeks specified; Scotland had 24, as against 23 and 19, and Ireland had 3, as against 6 in 1883 and 2 in 1882.

Trade is steadily reviving in the Northwest. At Winnipeg foreign goods to the value of \$230,919 were entered for consumption last month, against \$205,114 in the same period in 1883; while the import of Canadian free goods, in addition, was \$266,934, as compared with \$199,564 in September last year. Savings bank deposits, too, are mounting up, the deposits last month being \$45,613, or \$9,569 more than the withdrawals.

A fire broke out on Oct. 14, between one and two o'clock in the morning, in the flour mill of Mr. S. Cooper, situated at Derrylecka, two miles from Newry, Ireland, and raged until 6 o'clock, the entire premises, together with a quantity of grain, being destroyed. The damage is estimated at £6,000. No cause is assigned for the fire, and the premises were not insured. The workmen left the mill all right at 6 p.m., and it is believed to be the work of an incendiary.

With respect to the South German trade in cereals during the month of September, a correspondent, writing to the *Frankfurter Zeitung*, remarks that business has materially improved during that period. The arrivals of Russian and American wheat have declined, and the quotations have consequently advanced, and the increase of firmness has been shared by inland wheat. The demand has meanwhile improved, and though the arrivals of Russian grain are still considerable, the outlet is sufficient so absorb them all.

The Government railway proposal recently submitted to the Legislative Assembly of New South Wales comprehends the construction of 1,490 miles of railway, including extensions of 20 different lines traversing some very fertile parts of the colony. Light railways will be used where the nature of the country permits. The total estimated cost of the works is £14,000,000, to be raised in loans from time to time as required, the amount being probably spread over the next seven years. According to the official statement the net return from the present railways is 4½ per cent on the capital invested.

One of the ideas at one time prevalent amongst London operative millers, we remember, was that

roller mills always developed undue heat at work. Whilst examining the Blackburn mill of Messrs. Greenwood & Sons, says the *Millers' Gazette*, however, this belief on the part of a certain operative received a rude shock, for he exclaimed "Why there is no heat at all," in which we fully agreed with him, for nothing could be running nicer than that particular plant. Operative millers have a lot to learn, and the sooner they make up their minds to learn it the better for them, and the sooner that master millers make up their minds to give them every opportunity of doing so, the better will it be for them also.

The official report of the foreign trade of France has just been issued, and shows a decrease as compared with the corresponding period of last year. The import trade for the nine months of this year amounted to \$670,393,000, as against \$700,702,000 for the same period of 1883, a decrease of \$30,000,000. Of the imports, food products showed the largest decrease, being nearly \$20,000,000 less than in 1883, and manufactured imports decreased about \$11,000,000. The exports for the nine months were valued at \$468,629,000, as compared with \$499,112,000 in 1883, a decrease of about \$30,000,000. The principal decrease in exports was that of manufactures, which fell off about \$22,000,000. The exports of food products also fell off about \$16,000,000.

Russia seems to be making long strides towards the suppression of all freedom. No one can complain greatly that in a country such as that, with the sad experience of the effects of Nihilistic teachings through which it has passed, books and pamphlets teaching social theories should be suppressed; but when the Government goes so far as to suppress books relating to political economy, philosophical treatises, and works on history, it enters upon a course that can find no sympathy on this side the water, and when it enters the University of Kleiff, and arrests 200 of its students, the policy of its proceedings becomes very questionable. If there are good and solid reasons for its course in this matter, it is desirable that they should promptly be made known, else the sympathy of the civilized world, which has been largely with Russia in her troubles will be turned against her.

The *Brewer's Journal* says:—"Frequent reference has been made to the use of flour as a means of encouraging the development and elimination of yeast, and we now call attention to the fact that Hungarian wheaten flour is very far superior to the ordinary English variety for the particular purpose named. We are quite aware that such use of flour is not always advisable in the case of yeasts cultivated in saline water worts or indeed in soft water worts in which sugar also is used; such addition of 'flour dressing' frequently leading to liquefaction of the outcrop; but in other cases its employment often facilitates yeast formation, and a clean palate taste of resulting beer. If rye flour could be used, we have no doubt that this would be almost superior to the variety now under notice; but, unfortunately, rye flour intermixed with water or wort has a strong tendency to favor acidity, so that, altogether, we think a good wheaten flour preferable."

Some few weeks ago, says the *Millers' Gazette*, we referred to the number of millers who have extensive bread factories, who had adopted the roller system. During last week Messrs. Faulkner, the flour merchants and bakers, of Liverpool, decided to erect a mill on the Carter system, and this is to be proceeded with at once. After the order was given, Messrs. W. & J. Faulkner informed Mr. Carter that the reason they had decided to patronize him was on account of the high quality of flour which they had recently been purchasing from Mr. Arthur McDougall's mill at Liverpool. For many years they had been large purchasers of American flour, as it was better than the home manufacture, but what they have been buying from Mr. McDougall is fully 2s per sack better than American flour at the same price. The mill, owing to its situation in Liverpool, which is almost in the heart of the city, will be called the "Central Mills."

THE BOSS ELEVATOR CUP



is gaining favor every day. Over 13,000 sold in one day in three different States. My capacity in my new shop is 8,000 per week. I carry 30,000 cups in stock and can take care of any size order.
W. P. MYER,
19 and 21 E. South St.
INDIANAPOLIS, IND.



THE CASE MACHINERY

Is the most complete line of gradual reduction machinery made. Each machine is adapted to the others. A great saving in expense and convenience to millers. Our patterns for Mill Irons, Gear Wheels, Pulleys, &c., Elevator Heads and Feet, and all such are very complete and of the latest styles. If you want a single pair of Rolls, Purifiers, Centrifugal Reel, Bolting Chest, Pulley or Shaft, or a full gradual Reduction Mill,

WRITE US

CASE MFG. CO.,

COLUMBUS, OHIO.



CORN & COB CRUSHERS

PRICE, \$15.00.

Send For Circular.
SHAFTING, PULLEYS & HANGERS.

Pulleys a Specialty, Large or Small. Address,



T. B. WOOD & SONS, CHAMBERSBURG, PA.

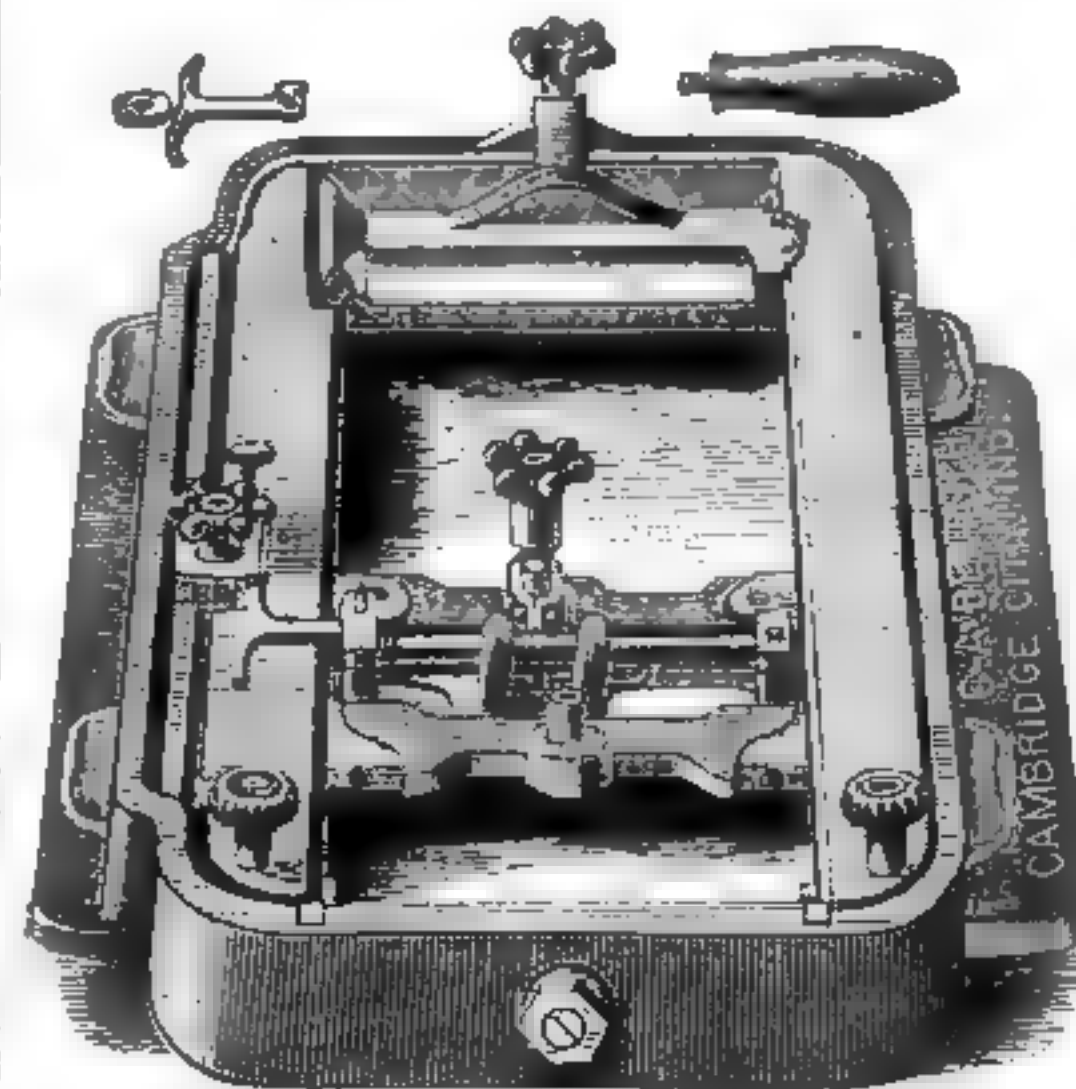
THE "SALEM" ELEVATOR BUCKET.

SHOVEL EDGE
Seamless Rounded Corners
CURVED HEEL.RUNS EASY
STRONG & DURABLE
EMPTIES CLEAN.

W. J. CLARK & CO., MANUFACTURERS, SALEM, OHIO.

New York Office and Salesroom, No. 9 Old Street.

Teetor's Patent Quick Adjustable Diamond Dresser



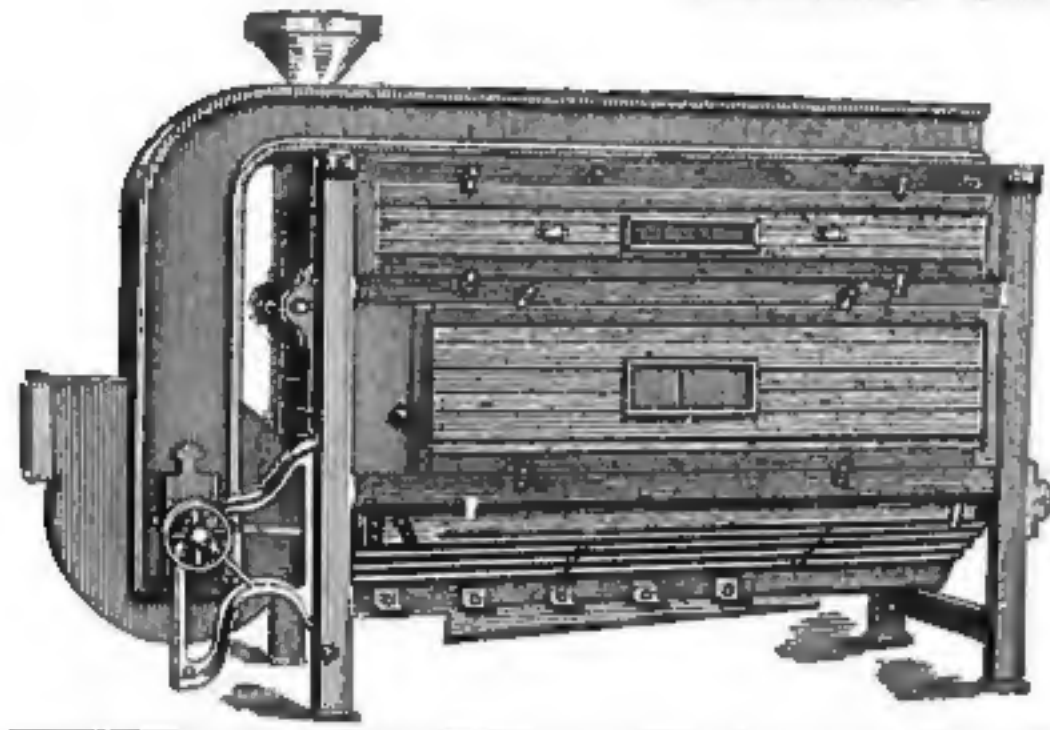
The A Machine. 29 inches long, 18 inches wide. Weight, 145 pounds. Same width carriage as the B machine.
The B Machine. 33 inches long, 19 inches wide. Weight, 170 pounds.

A revolution. No Screw Feed, no Ratchet Wheel, Paul Springs or extra Fixtures to contend with. A complete Machine warranted to be much the best and most complete Dresser in the world, will guarantee better satisfaction than any other of its class. Also that more work can be accomplished with less trouble and expense, or otherwise subject to be returned. The best of references given. Machines have been in use over four (4) years, and there has never been a call for any repairs for any machine in use. Parties are surprised as to the merit and simplicity of the machine, and say it is a revolution compared with others. Also as to adjustments which are all accomplished quick and easily by hand without the use of any tool. A positive feed which is similar to a friction feed, the only practical feed ever invented for a diamond dresser feed; is instantly reversed to cut right or left while in motion, also to cut fine or coarse. Can cut over one thousand cuts per inch. Consequently can do much deeper facing especially with a dull diamond once going over with one or two diamonds. By finer feeding while in motion, need not raise the diamond on account of a raise or hard spot on the face, in which case it will cut an even depth, also when the diamond is fed to either side of carriage, as it is so constructed. In this so many fail. The machine is ample wide so as to set over the spindle. All the feed mechanism is hardest steel. All the wear can be taken up. Specially warranted as represented. State size of burrs. Circulars giving full description forwarded.

C. A. BERTSCH,
CAMBRIDGE CITY, IND.

WOLF & HAMAKER'S LATEST IMPROVED MIDDINGS PURIFIER AND DUST CATCHER

The Only Machine with Two Sieves, for Fine and Coarse Middlings. The Only Machine with Balance Motion, Consequently no Jarring or Shaking.



ADAPTED to all styles of milling, high or low grinding, as fine or coarse middlings can be treated separately on one machine. Economy in space, as the machine is a double one. A perfect cloth-cleaning device. No brushing or wearing of cloth. Licensed Under All Conflicting Patents. We are the Agents for the E. P. Allis Roller Mills, and Mill Builders and Contractors. We are at all times prepared to furnish plans and estimates, and to contract for the erection of first-class mills of any desired capacity from 50 to 500 barrels. Parties contemplating Roller Mills or remodeling old mills will find it to their interest to write for Prices and Terms. **Wolf & Hamaker's Latest Improved Bolting Chest.** Also Mill Furnishings of Every Description.

OUR DUST CATCHER IS GIVING THE BEST OF SATISFACTION, AND OUR PRICES ARE SUCH THAT EVERY MILLER SHOULD HAVE THEM.

WOLF & HAMAKER, ALLENTOWN, PA.

ON VIEW AT PERMANENT EXHIBITION OF MILL MACHINERY, 36 BROADWAY, NEW YORK.



THE BRADFORD MILL CO.

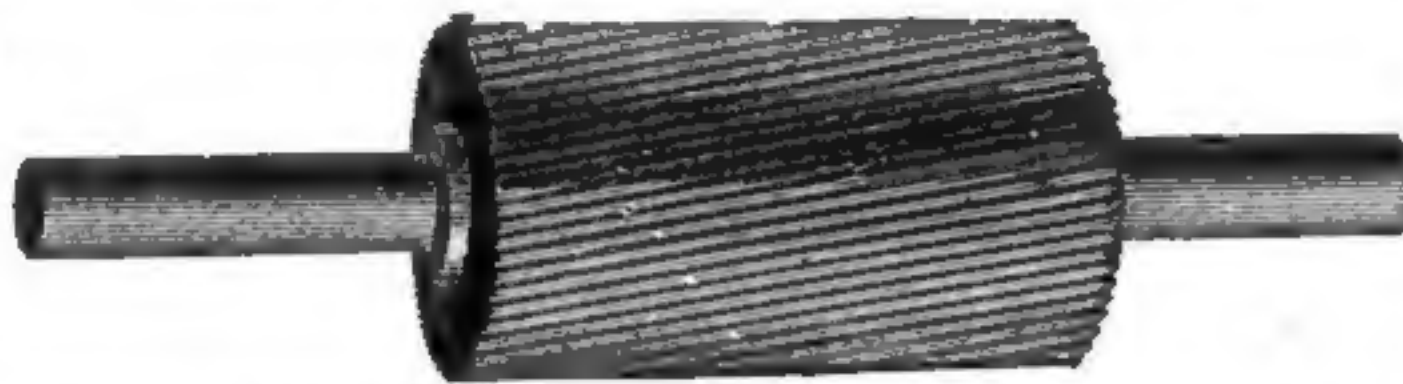
Manufacture a Complete Line of

FLOUR MILL MACHINERY.

Including Portable Corn and Middlings Mills.

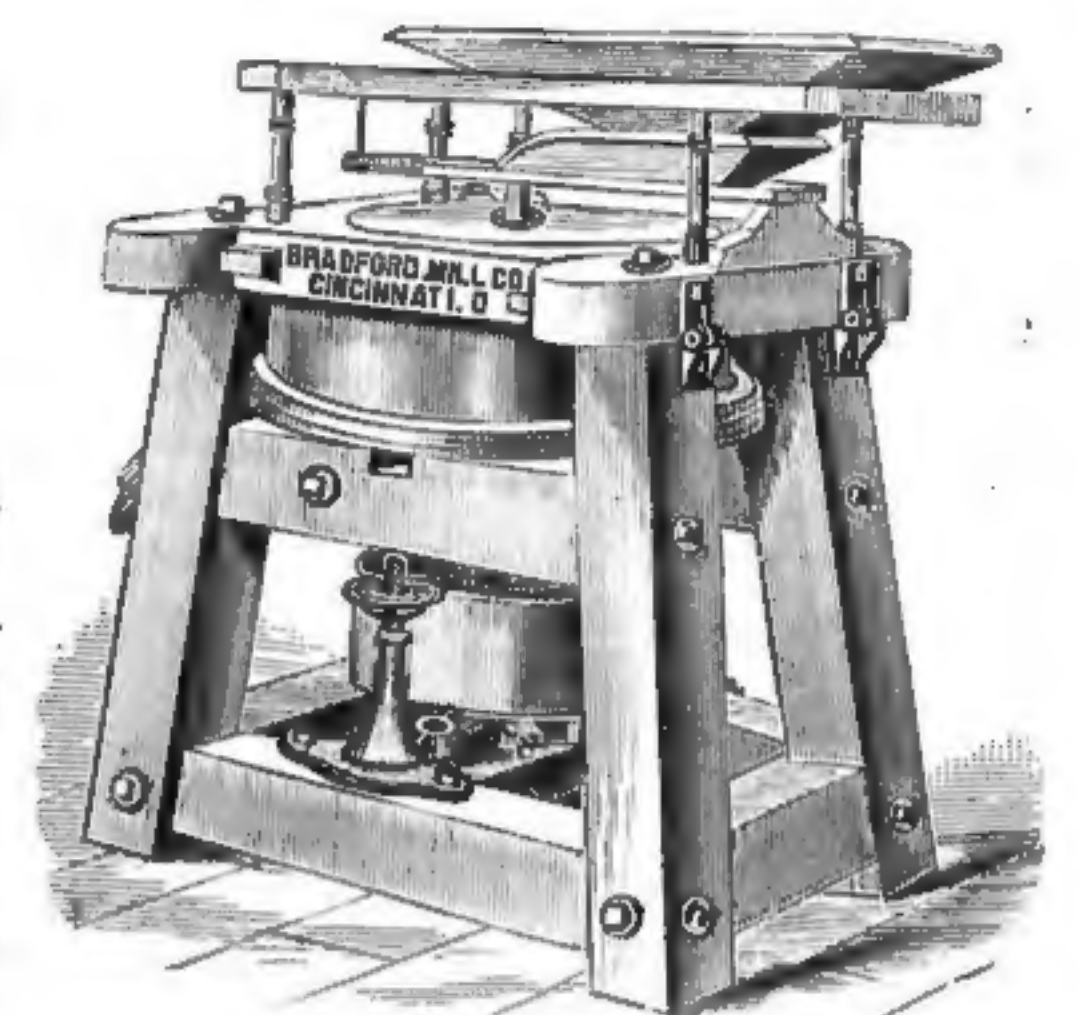
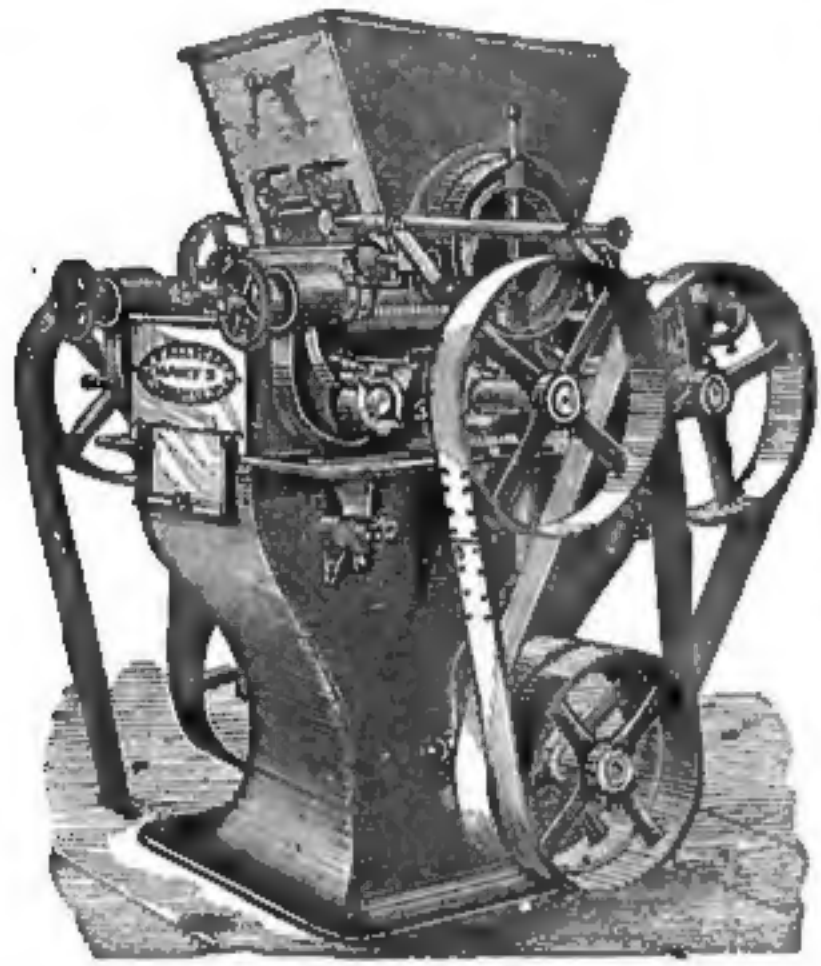
RE-GRINDING AND RE-CORRUGATING

PORCELAIN
ROLLS
RE-GROUND.

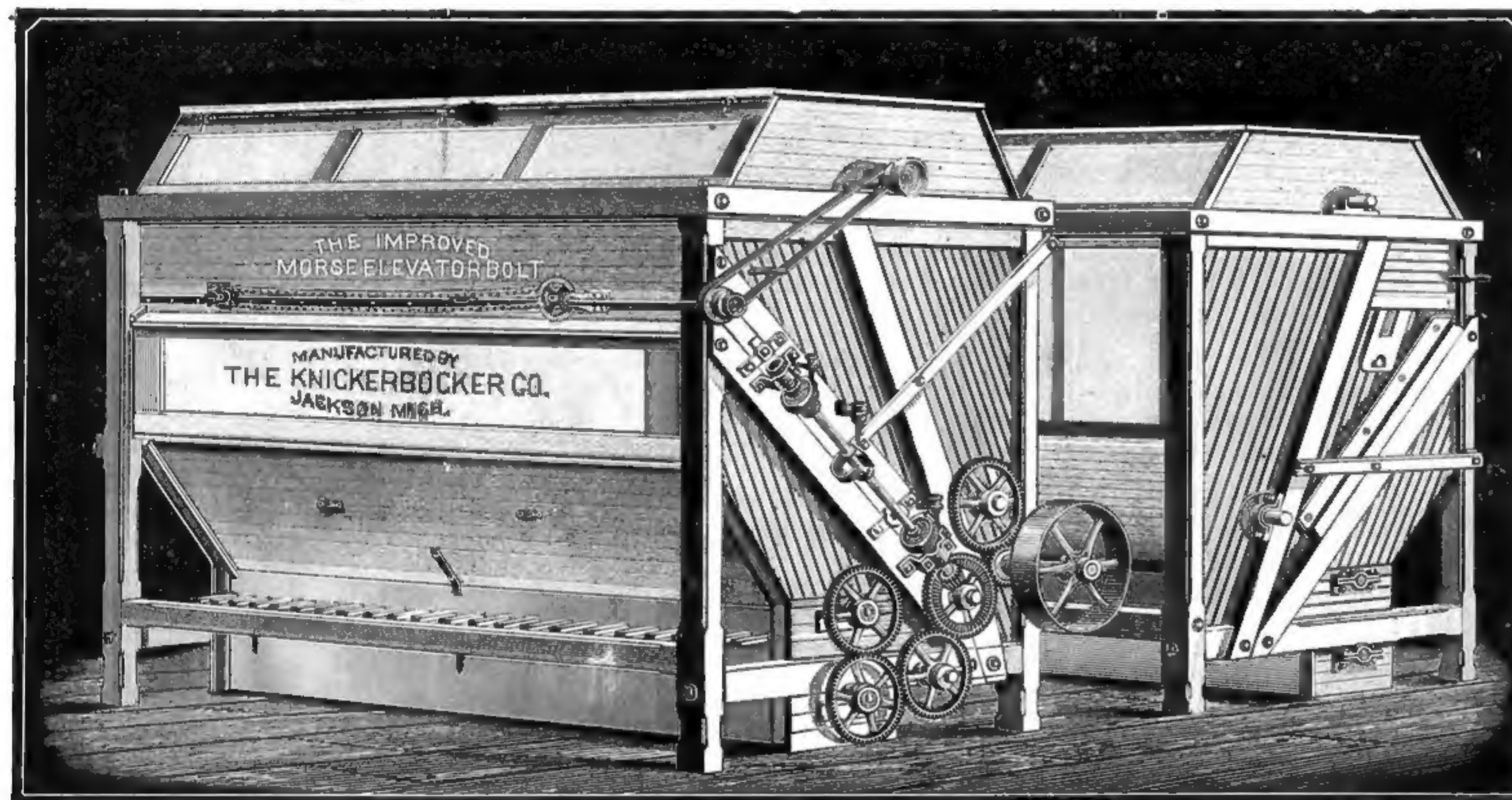


CHILLED IRON
ROLLS
Re-Ground and
Re-Corrugated.

EIGHTH AND EVANS STREETS, - CINCINNATI, OHIO.



The Improved Morse Elevator Bolt.



DEMONSTRATED IN OVER 100 MILLS TO BE THE BEST BOLTING DEVICE KNOWN.

THE KNICKERBOCKER CO., JACKSON, MICH.



A tool for Cutting, Leveling and Polishing the Furrows and Face of Millstones. Eight inches long, 3 1/4 inches wide, 1 1/2 inches thick. Received the highest and only Award given to Polishers at the Millers' Exhibition, Cincinnati, Ohio, June, 1880. For facing down high places on the buhr, this tool has no equal, and can be done much better and in one-sixth the time than with the mill pick. It is much larger, cuts better, can be used on either face or furrow, can be used until the corundum is entirely worn out on one side and then turned on the other side. Has over four times the amount of corundum and when the corundum is worn out can be replaced in the handle at a small cost. Sent by express, \$3.50. Satisfaction guaranteed, or money refunded. Address **HORACE DEAL, Bucyrus, Ohio**



Sight-lines, targets, straight-edges and all other fixings, as well as the extra time and help required to work them with the spirit level, done away with by this instrument. **Jas. Macdonald, 55 Broadway, New York.**

CAREY'S DOUBLE ANCHOR BOLTING CLOTH

Best in the Market. Every Yard Guaranteed Always up to Standard Count.



REGISTERED TRADE MARK.

SOLID COTTON BELTING. MILL PICKS.

FINE FRENCH BURR & ESOPUS MILLSTONES

BELTING.
PORTABLE MILLS.
SMUT MACHINES.

ELEVATOR BUCKETS,

BRUSH MACHINES, AND
MILL FURNISHINGS GENERALLY.
Send for Catalogue and Price List.

SAMUEL CAREY, 17 Broadway, NEW YORK.

HAS BEEN AWARDED
FIRST AND ONLY PREMIUM
AT THE
Millers' International Exhibition.



Office of THE MILLING WORLD.
Buffalo, N. Y., Nov. 5, 1884.

As we write, the result of yesterday's election is still in some doubt, with a more than apparent willingness to concede Democratic success as to the Presidency. It has been a good many years since so great popular interest has been aroused as to the result of such a contest, and while we are not prepared to believe the assertions, freely put forth by partisan organs, that the success of their respective candidates would insure the inauguration of commercial and industrial prosperity, it will be quite safe to assume that, now the excitement of a political contest is practically done with, a greater degree of attention will be given to business matters, and a somewhat greater degree of activity will rule. Says the New York Commercial Bulletin:

"It has been necessary from time to time during the past week to call attention to the absorbing interest taken in politics as the principal explanation of the inactivity in business circles. This diverting influence culminated to-day in an early adjournment, for much of the session business has been practically suspended. The falling off of winter wheat receipts during the last week in October as compared with the receipts of the first week in October is a matter of about thirty-six per cent. The public cables indicate very slow United Kingdom markets and quiet Continental markets. One feature of the almost featureless wheat market was developed at the First Call, when November contracts were bought up about $\frac{1}{2}$ ¢@ $\frac{3}{4}$ ¢, thus reducing the difference between November and December to $\frac{1}{2}$ ¢. To account for this, it is alleged that the November shorts were covering in order to provide for the wheat they borrowed Saturday, and which they delivered out in the expectation of seeing the market break. The market failed to do so, and the shorts were forced to cover.

"There has been a light trade in cash wheat. Holders have been too firm in their views for exporters. Prices are no higher; but the tendency of the market is towards better values. Freight room (ocean) is still scarce. Vessels are only coming here when pre-engaged to do so. Vessel owners are unwilling at present rates to take their chances of sending to this port without actual orders. November wheat special firmness has made the cash market so strong and not an actual export and milling demand for the grain. November wheat shows an advance of $\frac{3}{4}$ ¢—sold at 84¢ closes at 84 $\frac{3}{4}$ ¢, with sellers. The rest of the option list has only changed within the range of $\frac{1}{4}$ ¢. The whole market opened at Saturday's figures. December and late months gained $\frac{3}{4}$ ¢ and lost $\frac{1}{4}$ ¢ of the advance. The tone of the market at the close is quiet, but firm.

"The markets for flour like the market for everything else in the breadstuffs line is without features of interest or moment. There is no pressure to sell. There is no urgency in buying. Arrivals are liberal, but not depressing. The trade brands may be a trifle weak, but this is offset by decided strength in the export grades. More low grades could be sold than are arriving. Through shipments are in large proportion low grades; exporters are buying freely at the West. The market here closes quiet and steady at previous prices. Buckwheat flour continues dull and nominal. Corn goods are generally inactive, and without quotable change in prices. Mill feed in moderate supply; moderate demand; unchanged in price."

BUFFALO MARKETS.

FLOUR—City ground clear Northern Pacific spring \$4.50@5.00; straight Northern Pacific spring, \$5.00@5.50; amber, \$5.15@—; white winter, \$4.75@5.25; new process, \$6.00@6.50; Graham flour, \$4.00@5.00. Western straight Minnesota bakers, \$4.75@5.00; clear do, \$4.50@5.00; white winter, \$4.75@5.00; new process, \$6.00@6.50; low grade flour, \$2.50@4.00. OATMEAL—Ingersoll \$5.50; Bannerman's \$6.00; Akron \$6.25. CORNMEAL—Coarse, \$1.00; fine, \$1.10 per cwt. RYE FLOUR—In fair demand \$4.00@4.25. WHEAT—No. 1 hard Northern Pacific 84¢@—c; No. 2 do, 78 $\frac{1}{2}$ ¢@—c; No. 1 Northern Pacific, 80 $\frac{1}{4}$ ¢@—c; No. 2 red winter, 82¢@83¢@—c; milling white @—c; No. 1 white 80¢@81¢@—c per bu. CORN—No. 2 mixed western, 40¢@—c in store and 49 $\frac{1}{4}$ ¢@—c on track; No. 3 46¢@—c and 46 $\frac{1}{2}$ ¢@—c on track per bush. OATS—No. 2 Mixed Western 30¢@—c; ditto, 31¢@—c

DUFOR & CO.'S CELEBRATED BOLTING CLOTH.

on track; No. 2 white western, 82¢@—c on track per bush; retailing from store, —a—c per bush. BARLEY—Canada, 70¢@76¢; western, —a—c; No. 2 state, six-rowed, 67¢@a. 67 $\frac{1}{4}$ ¢ on track per bush. RYE—No. 2 Western —c—c for ditto on track; No. 2 state about 50¢ per bush.

FOREIGN EXCHANGE.

FOREIGN EXCHANGE.—The market for sterling was fully steady but quiet. Posted rates for short bills were advanced $\frac{1}{2}$ to 4.84 $\frac{1}{2}$ owing to the continued firmness of money in London; to-day's rate for discount there in the open market being reported 3 $\frac{1}{2}$ %. Should this rate be maintained and gold continue to move this way with present freedom, a further advance in the Bank of England rate is not improbable. The "Oregon" arriving Sunday, brought \$500,000 gold bars to the British Bank of North America, and the same institution has advices of another \$500,000 shipped to it November 4th. Plock & Co. were advised of another shipment of £30,000, and to-day's steamer from Liverpool brings \$500,000 gold. Posted rates closed at 4.80 $\frac{1}{2}$ for sixty days' and 4.84 $\frac{1}{2}$ for demand. The actual rates ranged: At sixty days sight, 4.79 $\frac{1}{4}$ @4.80; demand, 4.83 $\frac{3}{4}$ @4.84; cables, 4.84@4.84 $\frac{1}{2}$, and commercial, 4.77 $\frac{3}{4}$ @4.78 $\frac{1}{2}$. Continental exchange dull; francs 5.25 and 5.22@5.21 $\frac{1}{2}$; reichsmarks, 94 $\frac{1}{2}$ @94 $\frac{1}{4}$ and 94 $\frac{1}{2}$ @95; guilders, 39 $\frac{1}{4}$ @39 $\frac{1}{2}$ and 40 $\frac{1}{4}$. The closing posted rates were as follows:

	60 days.	90 days.
London	4 80 $\frac{1}{2}$	4 84 $\frac{1}{2}$
Paris francs	5 22 $\frac{1}{2}$	5 20
Geneva	5 21 $\frac{1}{2}$	5 19 $\frac{1}{2}$
Berlin, reichsmarks	94 $\frac{1}{2}$	95 $\frac{1}{2}$
Amsterdam, guilders	40	40 $\frac{1}{4}$

WHEAT AND DIRT.

It has been shown that the average shrinkage of wheat at the country elevators is about five pounds per bushel. This would seem, to the uninitiated, a pretty big squeeze, and enough to remove all the dirt in an ordinary crop. But notwithstanding this enormous shrinkage, nearly every car load of wheat received at Duluth is recleaned, and in many cases twice and three times. By the courtesy of the Duluth Elevator Co., a Pioneer-Press representative was allowed to select at random, a number of cars from a hundred or more standing on the tracks, and these, without previously being examined, were run into the elevator, weighed, cleaned and reweighed. The first car had been cleaned after being threshed; but the shrinkage was four bushels and forty pounds, and the wheat was not yet clean. Other cars that had been previously cleaned in the country, showed shrinkages of five, eight, seven and four and one-half bushels. One car of uncleaned wheat shrunk thirteen bushels in cleaning. The books of the elevator company show that in one case sixty-five bushels of dirt was taken one from one car load, and fifty-one from another, and then the wheat would barely pass grade. It is safe to say that the average shrinkage at Duluth is not far from two pounds per bushel. When the wheat is being loaded into vessels an inspector stands at the discharging spout, and if the wheat is not clean shuts it off, and the elevator company is forced to re-clean it at its own expense. The shrinkage this time comes out of the company, as it has issued receipts for the wheat on the weighing in, and is compelled to make good its grades. The Northern Pacific Elevator Company guarantees its weights and grades at Duluth, and claims that weights do not hold out even with the present heavy dockage. The Pillsbury & Hulbert Elevator company does not guarantee weights and grades at terminal points. The Northern Pacific company ships to its own order at Duluth, and tickets issued in the country can be exchanged for orders for wheat of the same grade at Duluth. It is claimed that in order to make the grades at Duluth, it is necessary to dock wheat as heavily as is done. Mr. Smith, the superintendent, says that natural shrinkage by evaporation is 6 per cent, as proven by scientific experiments, and the average shrinkage of five pounds to cover this and other causes is not too much. Grain men who are watching the matter say that 150,000 bushels of dirt will be sent to Duluth in the present crop. It must be remembered that nearly all the wheat is cleaned at the local elevators before being sent there, so that the total crop of dirt harvested and marketed by those farmers whose wheat goes to Duluth will aggregate a half million bushels.

Mr. Ruplee, superintendent of the elevator company at Duluth, says about sixteen tons of this dirt and chaff are used daily as fuel to run the en-

gines. This amount comes from three cleaners alone, and the total amount of dirt taken out averages about twenty-five tons per day. Hundreds of tons have been thrown into the bay, and the stuff is now nearly fifteen feet deep about the docks. It is given away to those who will carry it off, and a number of men are employed recleaning the best of it, they to receive one-half the proceeds as wages. They are already sick of their bargain, as nearly ten thousand bushels of this stuff is piled up on one floor, and cannot be sold at any price. The country elevators all run their engines on dirt, and use coal only to start the fires in the morning. Mr. Smith, of the Northwestern Elevator company at Fargo, says his company paid freight on 10,000 bushels of dirt to Duluth alone last year, and will pay freight on 50,000 bushels this year. The above statements are cold facts, and not exaggeration. The farmer can figure out from this condition of affairs why his wheat don't hold out. The question whether he is docked too heavily by the local elevators or not is a matter not easily determined. At Moorhead the Pioneer Press saw one farmer docked 12 pounds, another 4 and another 8. At Fargo one load of wheat was docked 13 pounds, another 4 and another 7. In one case the farmer protested vigorously, and the elevator agent offered to clean the wheat and ship it for him, but he declined the proposition, and accepted the eight-pound dockage with better grace. Another farmer swore he wouldn't stand a loss of four pounds, and drove away to find another and a more liberal purchaser. This is the condition of things where there are three elevators and two mills, and where the competition is not slow. What the show for dirty wheat is at points where there is only one buyer can be imagined.

THE GRAIN ELEVATOR TAX.

The argument of the Produce Exchange special committee against the tax of one cent per bushel upon grain loaded at the railroad elevators into ocean-bound vessels ought, says the N. Y. Commercial Bulletin, to receive the very serious consideration of the trunk lines. The efforts hitherto put forward by the grain trade to rescind the railroad's action of July, 1882, have, up to the present, been of no avail, save the extraction of an important admission from one of the companies that it was compelled to act in harmony with its rivals. Whether this idea of serving the interests of New York will still be adhered to, we cannot say. In face of the fact, however, that even the roads themselves acknowledge the injustice of the tax and have admitted that millions of bushels of grain have been diverted to the water routes, it is only reasonable to expect that another attempt will be made by them to grant the concessions asked for. As matters now stand, the elevators are deprived of their usefulness, for the impost simply prevents sales of free-on-board cargoes to be loaded at the railroad elevators; which, as the committee aptly put it, is a "proper and natural traffic." Now, in this instance at least, the roads have overshot the mark. Their "equalizing" principle has produced inequality and discrimination. Baltimore and Philadelphia have taken what legitimately belonged to New York. If the tax be not removed or modified, the railroads must expect to find some of their freight, especially grain, shipped from Southern ports, like Newport News for instance; which, as the Bulletin has previously pointed out, is making heavy bids for Eastern business. We observe that the special committee ask for a conference with the trunk lines in case "the reasons given herein should be considered insufficient" to convince them that the tax must be removed. This interchange of views, in our judgment, will do no good. All that can be said has been said. The facts are plain and need no emphasis or repetition. If it is an unjust exaction on the commerce of this port, it ought to be removed, notwithstanding the equalizing principle of the grain carriers. If, on the other hand, the roads, with the evidence before them, refuse to view the present aspect of affairs from an equitable standpoint, we repeat that no conference between the parties in interest will accomplish such a desirable result.

The Committee review the rail movement of grain from 1870 to October 1st, 1884, and on this point their deductions are clearly drawn and unmistakably conclusive. We quote: "If we turn from the consideration of the differentials to review the rail movement of the grain from 1870 to October 1, 1884, covering six years in which the differentials were 5c per 100 lbs. in favor of both Baltimore and Philadelphia, viz, 1870 to 1875, inclusive, one year, viz., 1876, when the Philadelphia rate was 4c per 100 lbs less than New York,

FIRST AND ONLY PREMIUM
OVER ALL COMPETITORS!
PURCHASE ONLY
FROM RELIABLE DEALERS.

the Baltimore rate remaining 5c per 100 lbs less, and when from 1877 to the present time differentials existed of 3c per 100 lbs. in favor of Baltimore and 2c per 100 lbs in favor of Philadelphia, and bearing in mind that up to July, 1882, no tax of 1c per bushel was levied upon New York commerce to divert it from New York, and enable rival cities to hold the advantages gained by them under the excessive differentials previously ruling in their favor, the Committee are of the opinion that the facts warrant decided action on the part of the New York roads to restore the natural supremacy of New York as a market."

JAMES S. MCGOWAN & SON,
SHIPPING AND COMMISSION MERCHANTS.
Choice Milling Wheats a Specialty
Room 80 Board of Trade Building.
BUFFALO, N. Y.
No Charge for Inspection

JOHN C. HIGGINS & SON,
Manufacturers and Dressers of
MILL PICKS,
163 KINZIE ST., CHICAGO.



GOLD MEDAL—SPECIAL, 1ST ORDER OF MERIT.



Send for Circular and Price List.

Picks will be sent on 30 or 60 days' trial to any responsible Miller in the United States or Canada, and if not superior in every respect to any other pick made in this or any other country, there will be no charge, and I will pay all express charges to and from Chicago. All my picks are made of a special steel, which is manufactured expressly for me at Sheffield, England. My customers can thus be assured of a good article, and share with me the profits of direct importation. References furnished from every State and Territory in the United States and Canada.

1831 THE CULTIVATOR 1885
AND
Country Gentleman

THE BEST OF THE AGRICULTURAL WEEKLIES.

THE COUNTRY GENTLEMAN is the LEADING JOURNAL of American Agriculture. In amount and practical value of Contents, in extent and ability of Correspondence, in quality of paper and style of publication, it occupies the FIRST RANK. It is believed to have no superior in either of the three chief divisions of Farm Crops and Processes, Horticulture & Fruit-Growing, Live-Stock and Dairying, while it also includes all minor departments of rural interest, such as the Poultry Yard, Entomology, Bee-Keeping, Greenhouses and Grapery, Veterinary Replies, Farm Questions and Answers, Fireside Reading, Domestic Economy, and a summary of the News of the Week. Its MARKET REPORTS are unusually complete, and much attention is paid to the P. aspects of the Crops, as throwing light upon one of the most important of all questions—When to Buy and When to Sell. It is liberally illustrated, and is intended to supply, in a continually increasing degree, and in the best sense of the term, a

LIVE AGRICULTURAL NEWSPAPER.

Although the COUNTRY GENTLEMAN has been GREATLY ENLARGED by increasing its size from 11 to 20 pages weekly, the terms continue as heretofore, when paid strictly in advance: ONE COPY, one year, \$2.50; FOUR COPIES, \$10, and an additional copy for the year free to the sender of the Club; TEN COPIES, \$20, and an additional copy for the year free to the sender of the Club.

All New Subscribers for 1885, paying in advance now, WILL RECEIVE THE PAPER WEEKLY, from OUR RECEIPT of the remittance, to January 1st, 1885, WITHOUT CHARGE.

SPECIMEN COPIES FREE. Address
LUTHER TUCKER & SON, Publishers,
ALBANY, N. Y.

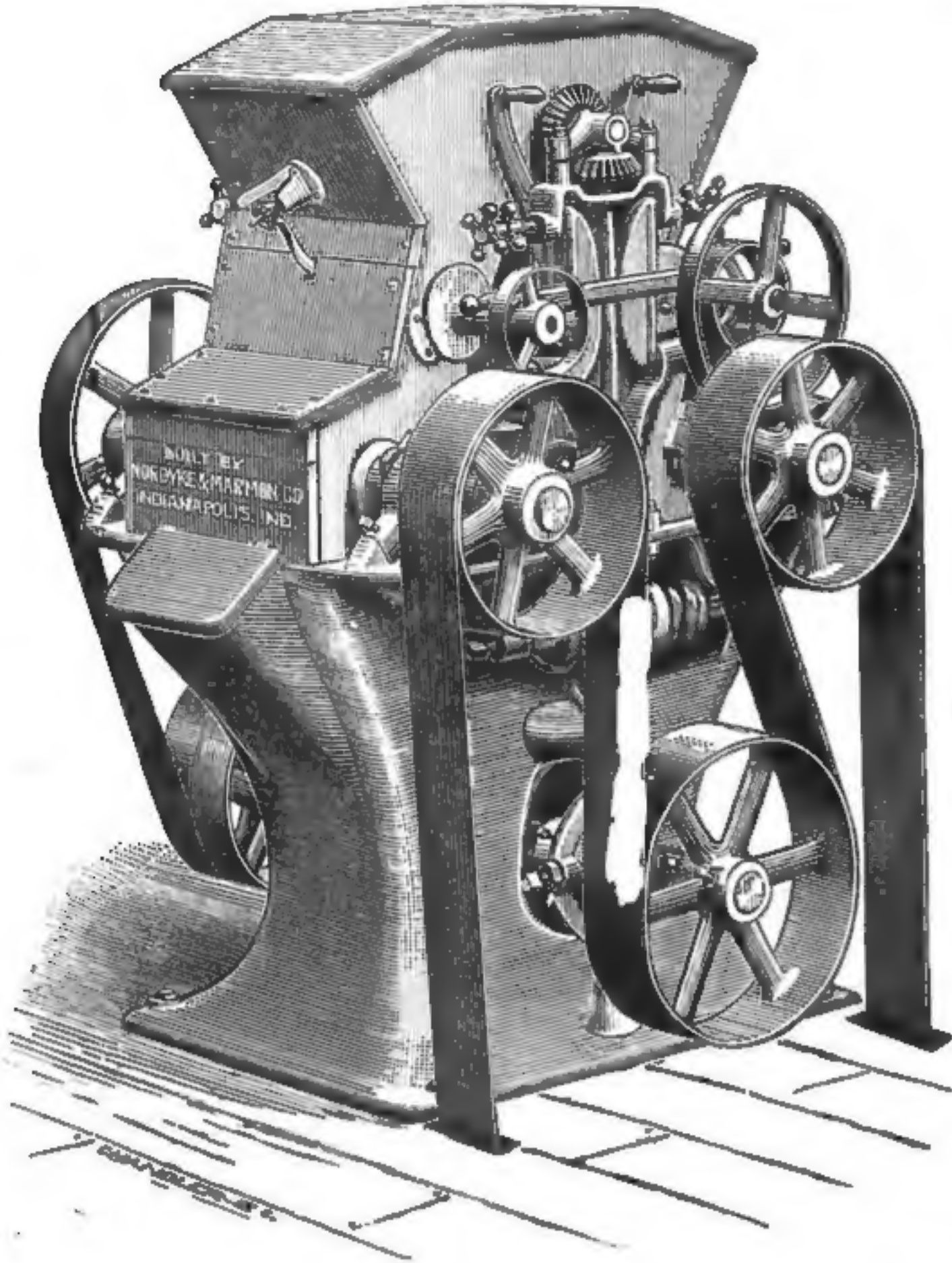
* THE INK *
WITH WHICH THIS PAPER IS PRINTED
IS MADE BY THE
QUEEN CITY PRINTING INK CO.
CINCINNATI, O.

NORDYKE & MARMON CO., INDIANAPOLIS, IND.

Builders from the Raw Material of

ROLLER MILLS, CENTRIFUGAL REELS, FLOUR BOLTS.

WE ARE THE SOLE OWNERS FOR THE UNITED STATES OF ALL THE PATENTS UPON THIS ROLLER MILL.



This Is the Only Roller Mill Made Having All the Essentials Needed In Successful Milling.

500 BARREL MILL IN MISSOURI.

Read what an Old Miller who has Thirty-Four Pairs of these Rolls in Constant Use, Says:

MESSRS. NORDYKE & MARMON CO., INDIANAPOLIS, IND.
Gentlemen: In regard to the workings of our new mill erected by you, will say it is fully up to and beyond our expectations. Our average work is fully 33 per cent. over your guarantee. Since starting our mill last July we have had no complaint of our flour from any market where sold. It gives universal satisfaction, and we have it scattered on the trade from Chicago to Galveston, Texas. Our yields are all that are attainable. We have tested it on both Spring and Winter wheats with satisfactory results on both varieties. Since the mill was turned over to us we have not changed a spout or a foot of cloth, nor have we found it required to make any changes. We have run as long as six days and nights without shutting steam off the engine, not having a "choke" or a belt to come off. The mill is entirely satisfactory to us, and for a fine job of workmanship, milling skill and perfection of system, we doubt if it is surpassed in the United States to-day. It is certainly a grand monument to the ability and skill of Col. C. A. Winn, your Milling Engineer and Designer. You may point to this mill with pride and say to competitors, "You may try to equal, but you will never beat it." Wishing you the success that honorable dealing deserves, I am,
 Yours, etc., R. M. FAUCETT, PRES.

500 BARREL MILL IN ILLINOIS.

MESSRS. NORDYKE & MARMON CO., INDIANAPOLIS, IND.
Gentlemen: We started up our mill in June last year, and it gives us pleasure to say that your Roller Mills are doing splendid work and give us no trouble. Your milling program required no changes, and concerning yields, we get all the flour from the offals, and we sell our best grades in the principal markets of the United States at the highest prices offered for any flour. All the machinery made by you is first-class, and we would not know where to purchase as good.
 Yours respectfully, DAVID SUPPGER & CO.

125 BARREL MILL IN INDIANA.

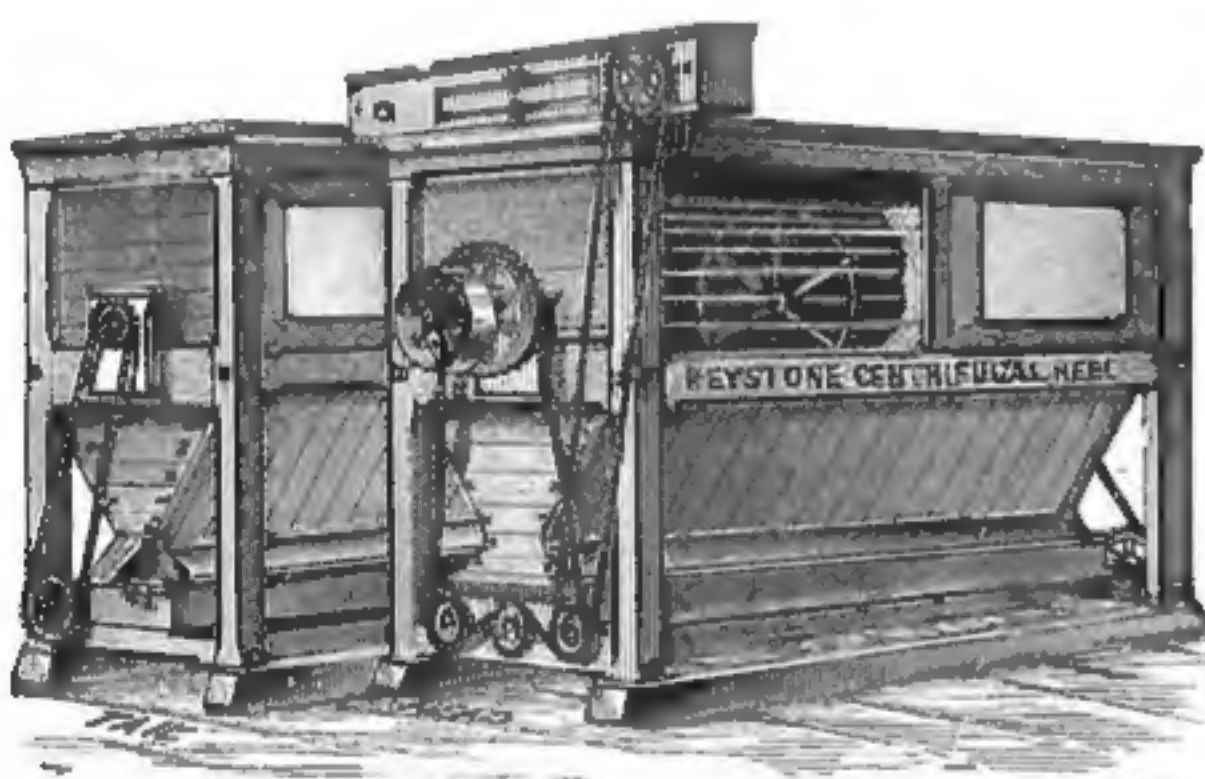
NORDYKE & MARMON CO., INDIANAPOLIS, IND.
Gentlemen: The 125 barrel All Roller mill you built us has been running all summer, and does its work perfectly. Before contracting with you for this machinery we visited many Roller Mills throughout the West and Northwest, built by the different leading mill furnishers, and from all we could see, those built by you seemed to be giving the best satisfaction, and this is why we bought our machinery of you. Our mill comes fully up to your guarantee, and the capacity runs over your guarantee. The bran and offal is practically free from flour, and our patent and bakers' flour compares favorably with any we have seen elsewhere. I don't think anyone can beat us. Your Roller Machines are the best we have seen; they run cool, and the interior does not sweat, and cause doughing of the flour. Judging from our success, we would recommend other millers to place their orders with you.
 Yours truly, J. T. FORD.

Letters on file in our office from a large number of small roller millers giving as favorable reports as above. A portion will be published as occasion demands.

SPECIAL MILLING DEPARTMENT!

Mill Builders & Contractors--Guarantee Results

Motive Power and Entire Equipment of a Modern Mill Furnished under one Contract.



KEYSTONE CENTRIFUGAL REEL

—PATENTED MAY 6th, 1884.—

Drag Brush Feed, Tightest Heads, Best Results. Cheapest and Best on the Market. Adapted to all Kinds of Milling. The New Drag Feed Thoroughly Protects the Silk. Sent on Trial to any Responsible Miller.

ROLLER MILLS, SCALPING REELS, PULLEYS, SHAFTING AND ALL KINDS OF MILL IRONS.

Full Stock of Dufour and Dutch Anchor Bolting Cloth.

BEST QUALITY FRENCH BURR MILLSTONES, FOR MIDLINGS, WHEAT AND FEED.

Leather, Rubber and Cotton Belting, Smut Machines, Purifiers and everything belonging to a Flour Mill furnished at Lowest Market Prices. For Circulars, Prices and Full Particulars, address the Manufacturer,

C. K. BULLOCK, 1357, 1359, 1361 RIDGE AVE., PHILADELPHIA, PENN.

UNION STONE CO., BOSTON, MASS.

PATENT MILLSTONE CEMENT.

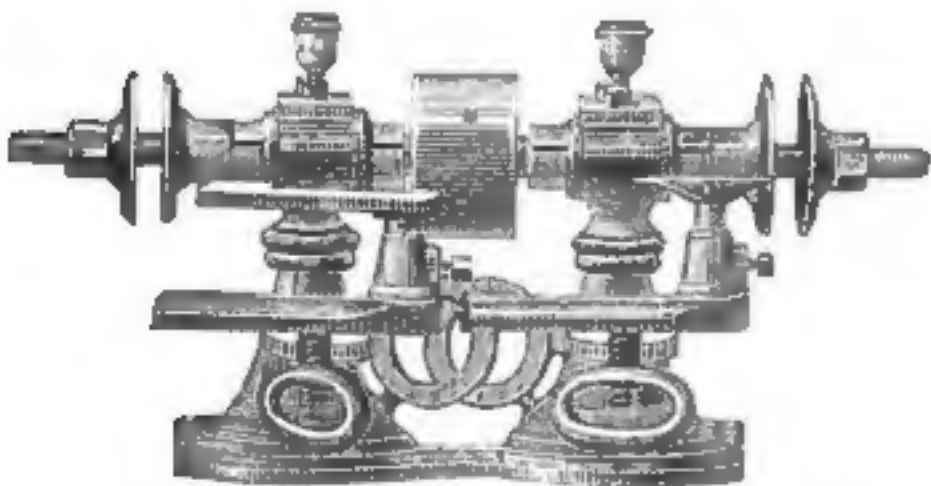
Invaluable to Millers for Repairing and Filling the Joints,

This is a new article of manufacture, and is greatly superior to the preparations now in common use, containing nothing of a poisonous nature. It has the nature and attains the hardness of a part of the Stone, and assists in grinding. Good Millstones are now in use, composed of miller's use, it is put up in cases of two sizes. Price per case: Small, \$3.00; Large, \$5.00. Otherwise we shall send C. O. D. by Express, collecting for return of the money. For manufacturers, the Furrows and



Cavities and Seams in French Burr and other Millstones.

use by millers. It is much cheaper, and can be applied by an inexperienced person. It is perfectly of French Burr Stone, wears evenly with it, and not only fills the cavity, but adheres to and betirely of this preparation. The Leading Makers are Adopting it to Build Their Millstones. For We cannot open an account for so small a sum, therefore *Cash should be sent with order*, otherwise furnish in bbls. of 800 lbs. Price upon application. Emery Rub Stones, for hand use in Finishing Faces of Millstones.



Emery Wheel Machine No. 0 Has 1/4 Inch Arbor.

Union Stone Co., 38 & 40 Hawley Street, Boston, Mass.

PATENTERS AND MANUFACTURERS OF THE

Union Emery Wheels, Emery Wheel Machinery and Tools a Specialty. Wooden Polishing Wheels, Automatic Knife Grinding Machines. Grinders' and Polishers' Supplies. Catalogue on Application.

EMERY, QUARTZ, CORUNDUM.



DIAMOND TOOLS, FOR DRESSING OR TRUING EMERY WHEELS



MILL SUPPLIES { Everything Used in a Mill of Every Kind Always on Hand.

Leather Cotton Rubber } BELTING, BOLTING CLOTH

ELEVATOR BUCKETS, BOLTS, MILL IRONS, &C.

Prices Close and Quality the Best.

The Case Mfg. Co., Columbus, Ohio.

ROLLS RE-GROUND

And Re-corrugated to order. Porcelain rolls re-dressed. Our Machinery for this purpose is very accurate. Can do work promptly.

Case Mfg. Co., Columbus, Ohio.

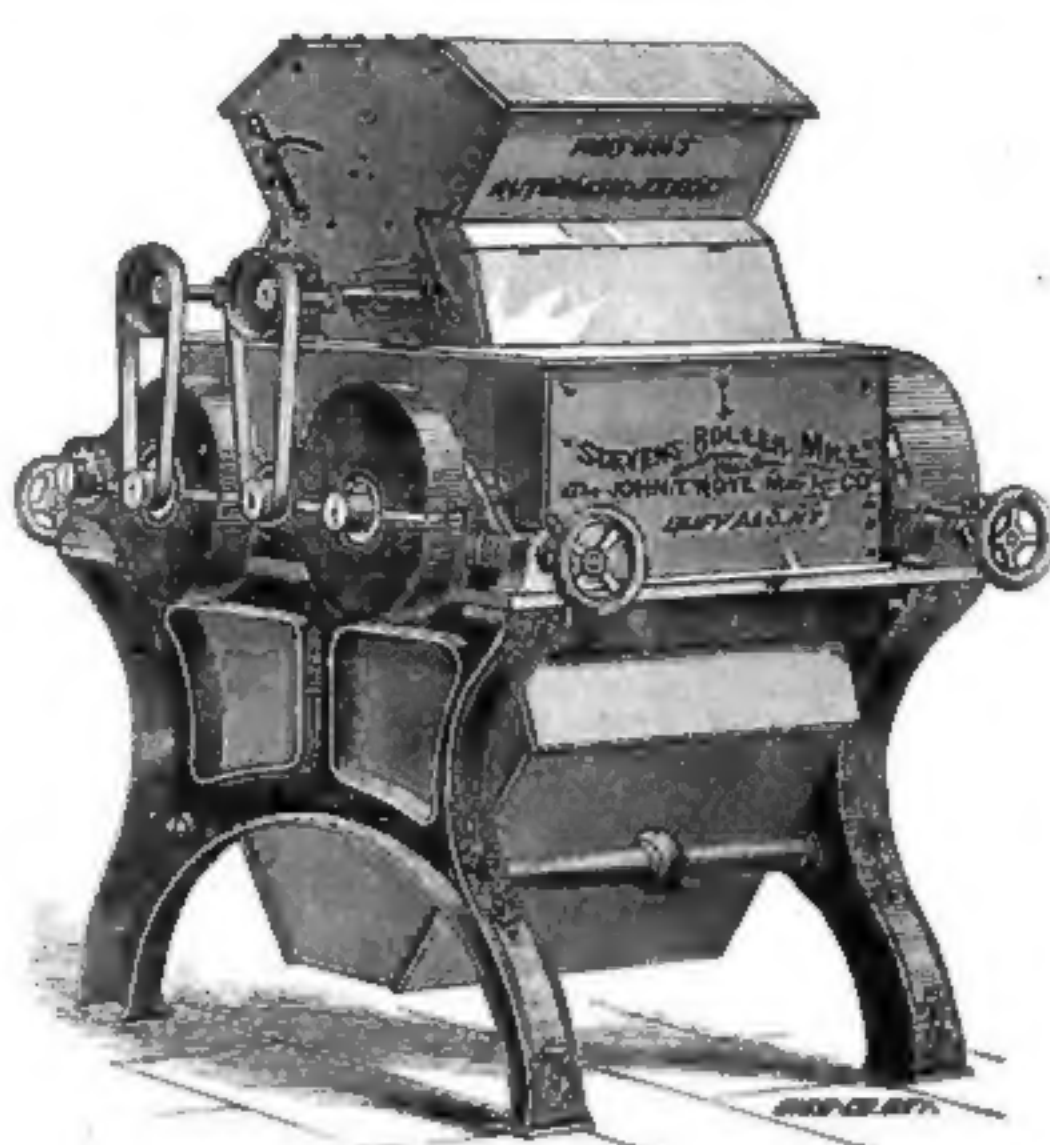
OUR SEMI - CENTENNIAL

— OF —

FLOUR MILL BUILDING.

Parties contemplating the erection of new mills, or improving and increasing the capacity of old ones, will serve their best interests by corresponding with and submitting their ideas to us.

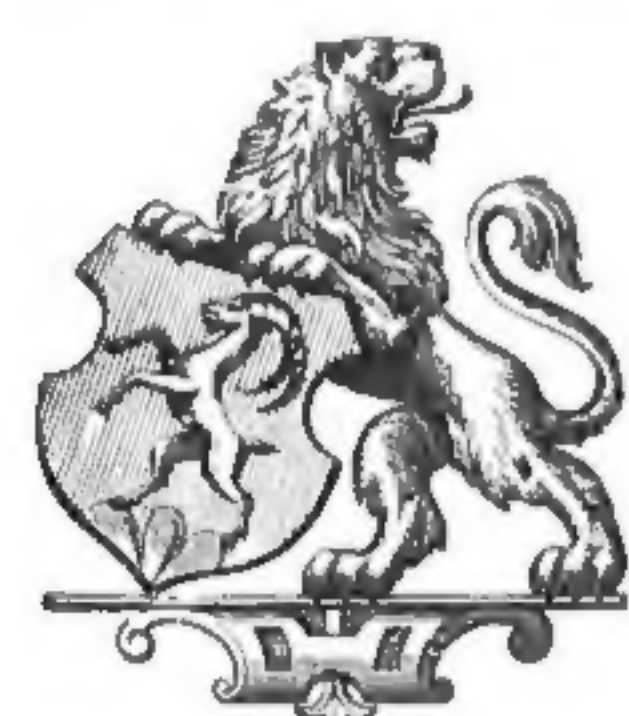
Single and Double Roller Mills,
Concentrated Roller Mills,
Rounds Sectional Roller Mills,
ALL WITH THE
Stevens Corrugation.



Simplicity of Construction, Positiveness of Action, Ease of Management, Less Liability to Get Out of Order, Less Power Required, Greater Capacity Obtained.

The Stevens Rolls are the most widely known and universally used of any roll in the world. Send for illustrated catalogue and price list.

THE JOHN T. NOYE MANUFACTURING CO., BUFFALO, N. Y.



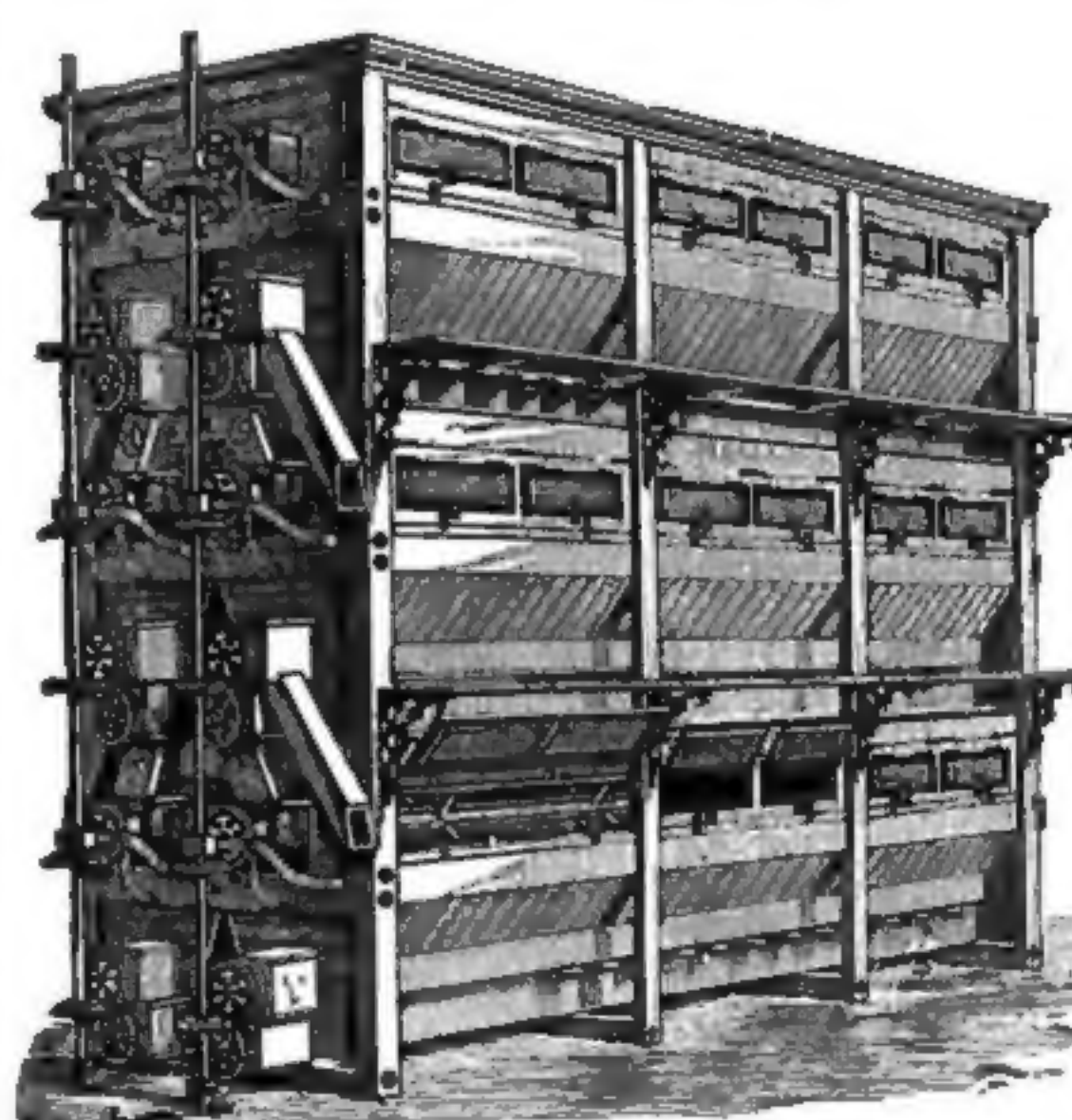
THE CELEBRATED
SCHINDLER-ESCHER
LION BRAND
Bolting Cloth

Is Imported Direct from Zurich, Switzerland, and Sold Wholesale or Retail by the

GREAT WESTERN MANUFACT'NG CO.

LEAVENWORTH, KANSAS.

Send for Price List, Samples, and Book of Diagrams.



RICHMOND CITY
MILL WORKS,

MANUFACTURERS OF AND DEALERS IN

Impr'ed Milling

MACHINERY

AND

ALL KINDS MILL SUPPLIES

Richmond, Indiana.

SEND FOR CATALOGUE.

THE EXCELSIOR ANCHOR BOLTING CLOTH TO THE FRONT.

RECOGNIZED AS THE QUEEN OF ALL BOLT CLOTHS BY ONE-THIRD OF THE MILL OWNERS, MILLERS AND BUILDERS IN THE UNITED STATES, AND THEIR VERDICT IS "GIVE US THE EXCELSIOR AND NO OTHER!" SEND FOR DISCOUNTS AND PRICES FOR MAKING UP, WHICH ARE GREATLY REDUCED.



RECOGNIZED AS THE QUEEN OF ALL BOLT CLOTHS BY ONE-THIRD OF THE MILL OWNERS, MILLERS AND BUILDERS IN THE UNITED STATES, AND THEIR VERDICT IS "GIVE US THE EXCELSIOR AND NO OTHER!" SEND FOR DISCOUNTS AND PRICES FOR MAKING UP, WHICH ARE GREATLY REDUCED.

HUNTLEY & HAMMOND, SOLE IMPORTERS, SILVER CREEK, N. Y.

Successors in the Bolting Cloth Trade to Huntley, Holcomb & Heine, Holcomb & Heine and Aug. Heine.

Note: the original is badly yellowed.
The original page 1 is shown at right.